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PESTICIDES IN ONTARIO GROUNDWATER RESOURCES A PROVINCIAL MONITORING PROGRAM 1988-1989

MARCH 1992

Environment
Environnement
Ontario

12/03/92

ISBN 0-7729-9200-2

PESTICIDES IN ONTARIO GROUNDWATER RESOURCES

A PROVINCIAL MONITORING PROGRAM

1988-1989

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MARCH 1992

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PIBS 1869
log 91-2302-230

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EXECUTIVE SUMMARY

A provincial pesticides groundwater monitoring network was established in 1985 by the Water Resources Branch. The purpose of this program is to assess the impact of agricultural chemicals on groundwater drinking water supplies. This report is a two year report for the 1988 and 1989 Pesticide Monitoring Programs. This program is a continuation of the ground water monitoring of domestic and municipal ground water supplies which was initiated in 1985.

During previous sample years the program focused on examining specific pesticides as potential contaminants of groundwater. Along with research done by other agencies, results indicated that groundwater is impacted by certain pesticides used in Ontario, the triazine group of pesticides in particular. The 1988/89 programs were more concerned with looking at the actual chemical pathways in respect to site specific and soil specific conditions and alternative methodologies which may reduce contamination.

The program through 1988/89 continued to focus on the triazine group of pesticides as well as metalachlor because of their continued widespread use as corn and soybean herbicides in Southern Ontario. The carbamate group was also monitored for in 1988 in the Central Region.

The 1988/89 program was coordinated by the Water Resources Branch staff and implemented by Regional Pesticide staff. Southeast, Southwest and Central regions participated in the 1988 program. In 1989 however, the program was carried on only in the Southwest region.

In 1988, 31 domestic groundwater supply wells and 32 piezometers were maintained as sample points by Regional and District Pesticide officers in areas of intense corn, soybean, apple and vegetable production in Southern Ontario. In 1989, Southwest region, the only region involved in the program continued their program with 37 sample points, (32 piezometers and 5 domestic wells).

Atrazine and its metabolite, d-ethyl atrazine are the pesticides of most concern due to their persistency in these shallow groundwater aquifers. Very few wells over this report period showed occurrences of pesticides other than atrazine and its metabolite d-ethyl atrazine.

Continued occurrences of persistent, though low levels of pesticides in Southwest and Southeast Regions, indicate an impact on shallow groundwater supplies. Pesticide occurrence remains relatively low in Central Region.

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1.0 INTRODUCTION

A provincial pesticides groundwater monitoring network was established in 1985 by the Water Resources Branch in conjunction with the Regional Operations Division. The purpose of this program is to assess the impact of agricultural chemicals on groundwater drinking water supplies. This report is a two year report for the 1988 and 1989 Pesticide Monitoring Programs. This program is a continuation of the ground water monitoring of domestic and municipal ground water supplies which was initiated in 1985.

During previous sample years the program focused on examining specific pesticides as potential contaminants of groundwater. Along with research done by other agencies, results indicated that groundwater is impacted by certain pesticides used in Ontario, the triazine group of pesticides in particular. The 1988/89 programs were more concerned with looking at the actual chemical pathways in respect to site specific and soil specific conditions and alternative methodologies which may reduce contamination. More control was thus afforded through the installation of piezometers at strategic locations.

The program through 1988/89 continued to focus on the triazine group of pesticides as well as metalachlor because of their continued widespread use as corn and soybean herbicides in Southern Ontario. The carbamate group was also monitored for in 1988 in the Central Region. This region was concerned with the impact of these chemicals used in apple growing areas, on groundwater.

At selected sites, analyses were also done for the chlorophenoxy, organophosphate and/or phenyl urea groups, depending on the crop history of the area.

The purpose of the study, is to examine the extent of contamination and persistency of agricultural chemicals in shallow ground water drinking supplies. The program identifies the chemicals that do exist in ground water to provide data for continued review of current provincial drinking water objectives for pesticides, and to prompt the setting of water quality guidelines for those pesticides which do not have a provincial drinking water objective. Findings also suggest that different methodologies in rate and time of application may significantly reduce concentrations in the groundwater.

The 1988/89 program was coordinated by the Water Resources Branch staff and implemented by Regional Pesticide staff. Southeast, Southwest and Central regions participated in the 1988 program. In 1989 however, Southwest was the only participating region. The results are presented in Appendix 5.

2.0 SAMPLING PROGRAM

2.1 Introduction

The results of previous programs years indicated that improper construction and maintenance of wells along with mishandling of farm chemicals were major contributors to groundwater contamination by pesticides.

The 1986 and 1987 programs adhered to stricter criteria than that of 1985, for site selection, and sampling protocols, which led to higher standards of data integrity.

In the 1988 and 1989 programs, in order to eliminate the uncertainties associated with domestic well sampling, several piezometers were installed and strict sampling protocols were observed.

Results indicated that shallow sandy aquifers are susceptible to contamination by pesticides due to leaching.

To further study the fate and movement of contaminating pesticides, the Water Resources Branch initiated a research project in 1988 on pesticide contamination in the unsaturated zone. This study is still ongoing and results and findings are as yet inconclusive. Results will not be presented here.

2.2 Site Selection

Areas selected for sampling have focused on shallow groundwater beneath sandy soil in areas where agricultural activity is intense.

A series of changes were made to the sample site locations in 1988/89 with respect to previous years.

In 1988 31 domestic groundwater supply wells, 1 municipal well and 32 piezometers were maintained as sample points by Regional and District Pesticide officers in areas of intense corn, soybean, apple and vegetable production in Southern Ontario.

Results for the Central Region in 1987 indicated non detectable to trace levels of pesticides. For this reason, the locations of sample sites in this region were changed. The number of sites was kept at nine.

Southeast Region retained the same number but also changed location of all sites in 1988. The region continued to sample for parameters of previous years.

TABLE I

BREAKDOWN OF SAMPLE SITES BY REGION

	SOUTHWEST	CENTRAL	SOUTHEAST	TOTAL
DOMESTIC				
'88	13	9	9	31
'89	5	0	0	5
PIEZOMETERS				
'88	32	0	0	32
'89	32	0	0	32
MUNICIPAL				
'88	0	0	1	1
'89	0	0	0	0
TOTAL				
'88	45	9	10	64
'89	37	0	0	37

In 1988, with the exception of 87SW12 (renamed 88PSW011 in 1988), Southwest region abandoned all sites sampled in 1987 and introduced 12 new domestic well sites and 32 piezometer sites in 1988 to increase the standard of data integrity. In 1989, Southwest region abandoned wells numbered SW88001 - SW88008B (domestic wells sampled in the 1988 program), as the program developers were not satisfied with the sample site integrity which was reflected in the sometimes inconsistent results. It had already been concluded that shallow groundwater supplies are impacted. The study was now concerned with assessing the level to which this resource is affected. This was achieved by increasing the integrity of the program. The 32 piezometer sites were installed at strategically designed locations to afford greater control in the quality of data retrieved. Three domestic wells were maintained from the 1988 program (88PSW009 - 88PSW011), and two added (89PSW012 and 89PSW013), for reference.

The sites were chosen where hydrogeological conditions indicated a relatively high susceptibility for contamination by pesticides. The chosen sites are characterized by sandy soils with high water tables.

In 1989, Southwest region, (the only region involved in the program during that year), continued their program with 37 sample points, (32 piezometers and 5 domestic wells).

Site selection criteria is presented in Appendix 1.

2.3 Site Descriptions

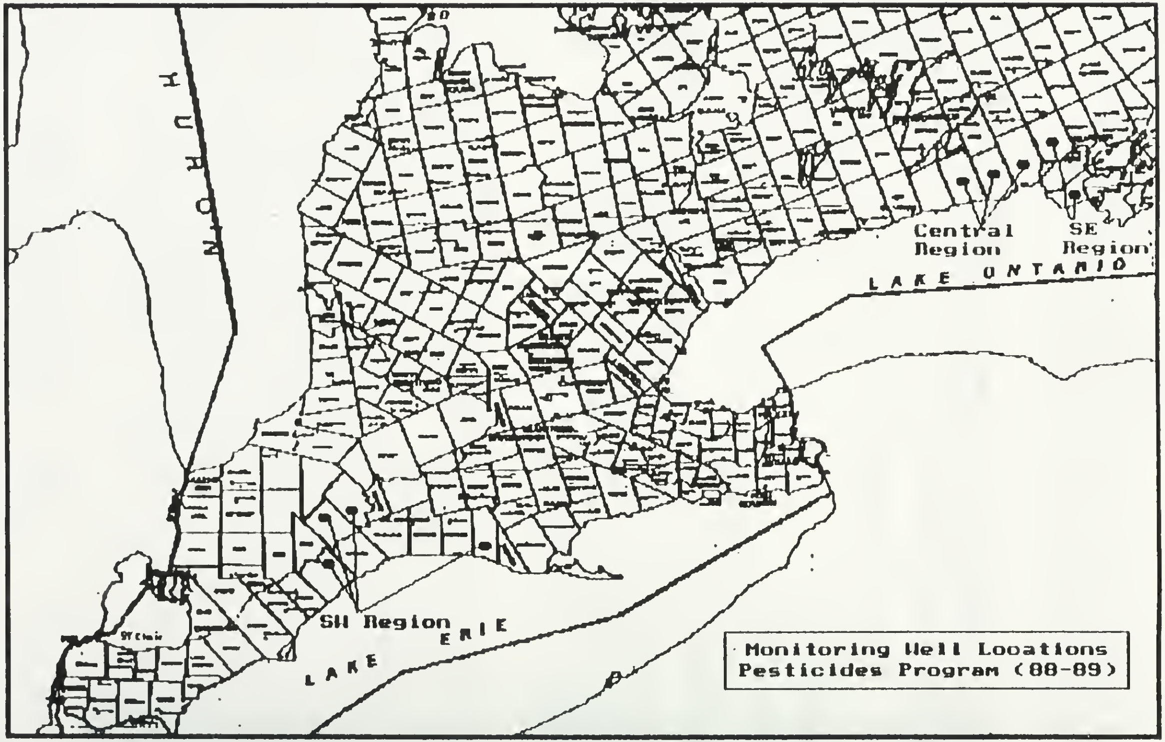
2.3.1 Southwest Region

Sample sites in the Southwest region are located on Figure 1 and summarized in Tables II and III.

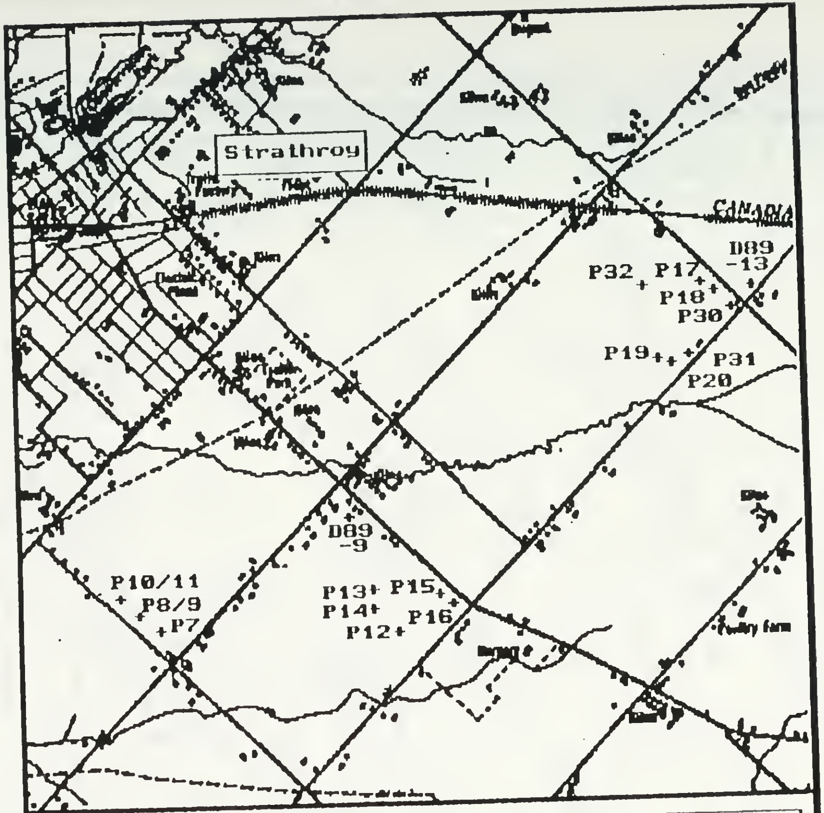
Domestic sample sites were reduced considerably in 1988/89. In 1987, 24 domestic wells were sampled in Southwest region. In 1988/89, 13 and 5 domestic sites were sampled respectively. Thirty two piezometers were however added to the program in 1988 for increased control, bringing the sample site number to 45 in 1988 and 37 in 1989.

1988
Domestic sample sites 88PSW001 through 88PSW008B are located within the Norfolk Sand Plain, Bayham Township in Elgin county, an area of intensive tobacco farming. The surficial deposits of the Norfolk Sand Plain as described by U. Sibul (OWRC - 1969) consists of lacustrine sand and silt deposited in glacial lakes Whittlesey and Warren. The sequence displays crude stratification by gradations in grain size, pebble content, and number of silt and clay inclusions but with distinct horizons of either clean silt or clay. The bedrock at these sites; the Devonian Delaware Formation, consists of a buff clastic limestone grading upward to a brown finely crystalline limestone with interbedded black shale. Water is generally found at depths between 3 - 10 m in the overburden and about 80 m in bedrock wells. Sites 88PSW001 - 88PSW008B are all overburden wells. The majority of these wells are bored or sandpoint wells for which water well records are unavailable. Static water levels suggest unconfined conditions.

Domestic sample sites 88PSW009 - 88PSW011 are located in Middlesex, Elgin and Lampton Counties respectively. These wells were introduced into the program in 1988 and maintained as reference wells during the 1989 piezometer sample site program. Sample site 88PSW009 is located in the Ekfrid Clay plain which is a deposit from the last continental glacier, and consists mainly of a



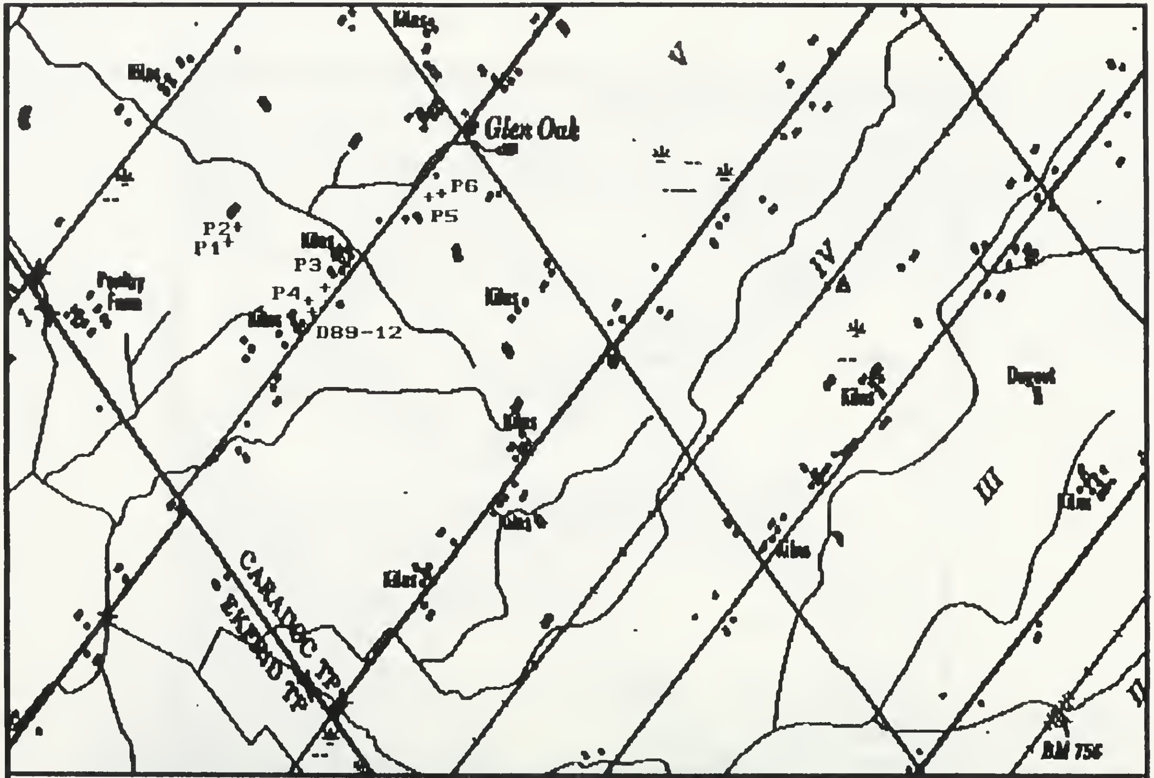
Monitoring Well Locations
Pesticides Program (88-89)



Pesticides
Report 88-89

Southwest Region
Location Map A1

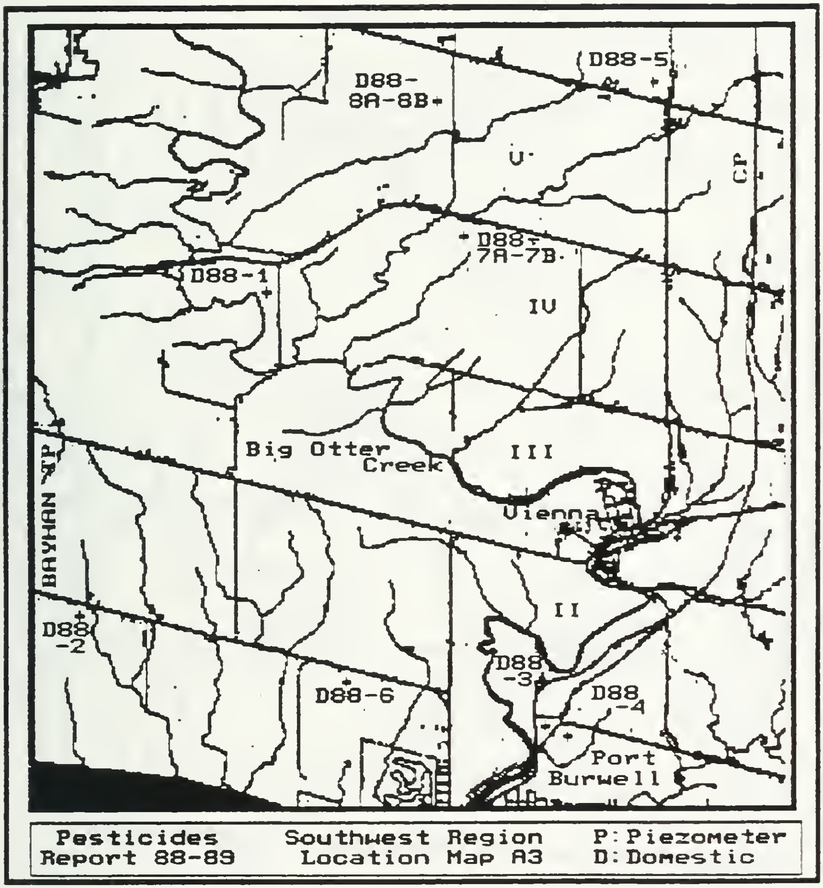
P:Piezometer
D:Domestic

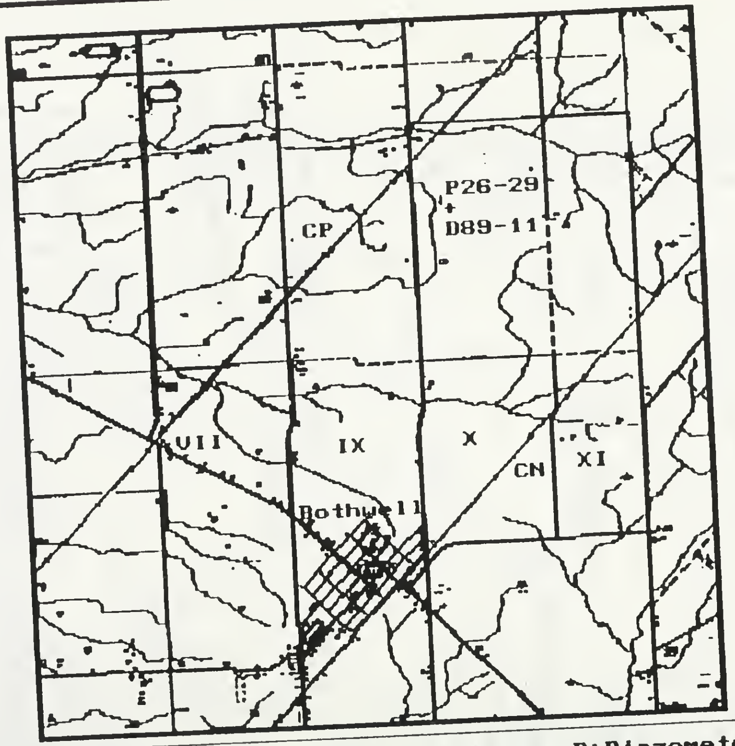


Pesticides Report 88-89

Southwest Region Location Map A2

P:Piezometer
D:Domestio


D88-5
D88-8A-8B
U
CP
D88-7A-7B
D88-1
IV
III
Big Otter Creek
Vienna
BAYHAN TP
II
D88-2
D88-3
D88-6
D88-4
Port Burwell
Pesticides Report 88-89
Southwest Region Location Map A3
P: Piezometer
D: Domestic



Pesticides
Report 88-89

Southwest Region
Location Map A4

P:Piezometer
D:Domestic

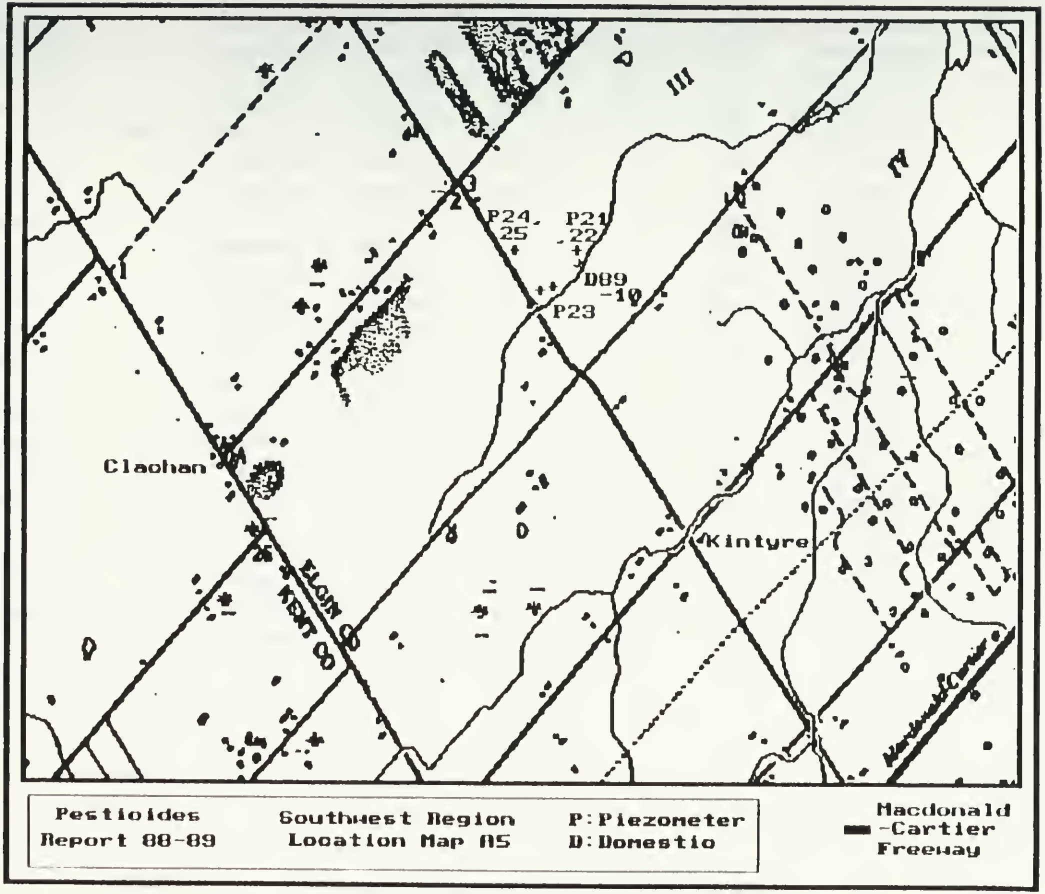

P24, 25
P21 ,22
D89 -10
P23
Clachan
Kintyre
ELGIN CO
KENT CO
Macdonald Cartier
Pesticides Report 88-89
Southwest Region Location Map A5
P: Piezometer
D: Domestic
Macdonald -Cartier Freeway

TABLE II

SUMMARY OF WELL DATA FOR SOUTHWEST REGION 1988

SITE NO.	WELL RECORD	COUNTY	TOWNSHIP	LOT/CONC.	USE	DATE CONT.	WELL TYPE	DEPTH (m)
88PSW001	20–2727	ELGIN	BAYHAM	5,6/4	D	1977	BORED	15
88PSW002	–	ELGIN	BAYHAM	3/1	D		SANDPOINT	11
88PSW003	–	ELGIN	BAYHAM	13/1	D	1955	BORED	5
88PSW004	–	ELGIN	BAYHAM	13/1	D,S	1940	BORED	7
88PSW005	N/A	ELGIN	BAYHAM	123E/6	D		DRILLED	
88PSW006	–	ELGIN	BAYHAM	8N/1	D	1890	BORED	16
88PSW007A	–	ELGIN	BAYHAM	11/4	D,S	1930	BORED	15
88PSW007B	N/A	ELGIN	BAYHAM	11/4	D	1974	BORED	15
88PSW008A	N/A	ELGIN	BAYHAM	10/5	D	1969	SANDPOINT	9
88PSW008B	–	ELGIN	BAYHAM	10/5	D,S	1939	SANDPOINT	13
88PSW009	–	MIDDLESEX	CARADOC	11/8	D	1880	BORED	6
88PSW010	–	ELGIN	ALDBOURGH	3/3	D	N/A	BORED	N/A
88PSW011	–	LAMPTON	EUPHEMIA	18/10	D	N/A	BORED	N/A
88PSW001P	–	MIDDLESEX	CARADOC	2/6	P	1988	PIEZOMETER	5.11
88PSW002P	–	MIDDLESEX	CARADOC	2/6	P	1988	PIEZOMETER	3.58
88PSW003P	–	MIDDLESEX	CARADOC	2/6	P	1988	PIEZOMETER	3.80
88PSW004P	–	MIDDLESEX	CARADOC	2/6	P	1988	PIEZOMETER	3.19
88PSW005P	–	MIDDLESEX	CARADOC	4/5	P	1988	PIEZOMETER	4.72
88PSW006P	–	MIDDLESEX	CARADOC	4/5	P	1988	PIEZOMETER	3.25
88PSW007P	–	MIDDLESEX	CARADOC	9/9	P	1988	PIEZOMETER	4.69
88PSW008P	–	MIDDLESEX	CARADOC	9/9	P	1988	PIEZOMETER	5.77
88PSW009P	–	MIDDLESEX	CARADOC	9/9	P	1988	PIEZOMETER	4.56
88PSW010P	–	MIDDLESEX	CARADOC	9/9	P	1988	PIEZOMETER	5.24
88PSW011P	–	MIDDLESEX	CARADOC	9/9	P	1988	PIEZOMETER	4.20
88PSW012P	–	MIDDLESEX	CARADOC	11/8	P	1988	PIEZOMETER	7.93
88PSW013P	–	MIDDLESEX	CARADOC	11/8	P	1988	PIEZOMETER	5.13
88PSW014P	–	MIDDLESEX	CARADOC	11/8	P	1988	PIEZOMETER	4.69
88PSW015P	–	MIDDLESEX	CARADOC	11/8	P	1988	PIEZOMETER	3.98

TABLE II

SUMMARY OF WELL DATA FOR SOUTHWEST REGION 1988

SITE NO.	WELL RECORD	COUNTY	TOWNSHIP	LOT/CONC.	USE	DATE CONT.	WELL TYPE	DEPTH (m)
88PSW017P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	5.20
88PSW018P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	3.75
88PSW019P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	4.20
88PSW020P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	3.45
88PSW021P	–	ELGIN	ALDBOURGH	3/3	P	1988	PIEZOMETER	3.01
88PSW022P	–	ELGIN	ALDBOURGH	3/3	P	1988	PIEZOMETER	2.23
88PSW023P	–	ELGIN	ALDBOURGH	3/3	P	1988	PIEZOMETER	3.28
88PSW024P	–	ELGIN	ALDBOURGH	3/3	P	1988	PIEZOMETER	3.14
88PSW025P	–	ELGIN	ALDBOURGH	3/3	P	1988	PIEZOMETER	2.33
88PSW026P	–	LAMPTON	EUPHEMIA	18/10	P	1988	PIEZOMETER	3.60
88PSW027P	–	LAMPTON	EUPHEMIA	18/10	P	1988	PIEZOMETER	3.23
88PSW028P	–	LAMPTON	EUPHEMIA	18/10	P	1988	PIEZOMETER	2.30
88PSW029P	–	LAMPTON	EUPHEMIA	18/10	P	1988	PIEZOMETER	3.59
88PSW030P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	8.71
88PSW031P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	6.86
88PSW032P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	10.83

D – Domestic   S – Livestock   I – Irrigation

TABLE III

SUMMARY OF WELL DATA FOR SOUTHWEST REGION 1989

SITE NO.	WELL RECORD	COUNTY	TOWNSHIP	LOT/CONC.	USE	DATE CONT.	WELL TYPE	DEPTH (m)
89PSW009	–	MIDDLESEX	CARADOC	11/8	D	1880	BORED	6
89PSW010	–	ELGIN	ALDBOURGH	3/3	D	N/A	BORED	N/A
89PSW011	–	LAMPTON	EUPHEMIA	18/10	D	N/A	BORED	N/A
89PSW012	–	MIDDLESEX	CARADOC	2/6	D	N/A	BORED	N/A
89PSW013	–	MIDDLESEX	CARADOC	16/8	D	N/A	BORED	N/A
89PSW001P	–	MIDDLESEX	CARADOC	2/6	P	1988	PIEZOMETER	5.11
89PSW002P	–	MIDDLESEX	CARADOC	2/6	P	1988	PIEZOMETER	3.58
89PSW003P	–	MIDDLESEX	CARADOC	2/6	P	1988	PIEZOMETER	3.80
89PSW004P	–	MIDDLESEX	CARADOC	2/6	P	1988	PIEZOMETER	3.19
89PSW005P	–	MIDDLESEX	CARADOC	4/5	P	1988	PIEZOMETER	4.72
89PSW006P	–	MIDDLESEX	CARADOC	4/5	P	1988	PIEZOMETER	3.25
89PSW007P	–	MIDDLESEX	CARADOC	9/9	P	1988	PIEZOMETER	4.69
89PSW008P	–	MIDDLESEX	CARADOC	9/9	P	1988	PIEZOMETER	5.77
89PSW009P	–	MIDDLESEX	CARADOC	9/9	P	1988	PIEZOMETER	4.56
89PSW010P	–	MIDDLESEX	CARADOC	9/9	P	1988	PIEZOMETER	5.24
89PSW011P	–	MIDDLESEX	CARADOC	9/9	P	1988	PIEZOMETER	4.20
89PSW012P	–	MIDDLESEX	CARADOC	11/8	P	1988	PIEZOMETER	7.93
89PSW013P	–	MIDDLESEX	CARADOC	11/8	P	1988	PIEZOMETER	5.13
89PSW014P	–	MIDDLESEX	CARADOC	11/8	P	1988	PIEZOMETER	4.69
89PSW015P	–	MIDDLESEX	CARADOC	11/8	P	1988	PIEZOMETER	3.98
89PSW016P	–	MIDDLESEX	CARADOC	11/8	P	1988	PIEZOMETER	3.20
89PSW017P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	5.20
89PSW018P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	3.75
89PSW019P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	4.20
89PSW020P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	3.45
89PSW021P	–	ELGIN	ALDBOURGH	3/3	P	1988	PIEZOMETER	3.01
89PSW022P	–	ELGIN	ALDBOURGH	3/3	P	1988	PIEZOMETER	2.23
89PSW023P	–	ELGIN	ALDBOURGH	3/3	P	1988	PIEZOMETER	3.28
89PSW024P	–	ELGIN	ALDBOURGH	3/3	P	1988	PIEZOMETER	3.14

TABLE III

SUMMARY OF WELL DATA FOR SOUTHWEST REGION 1989

SITE NO.	WELL RECORD	COUNTY	TOWNSHIP	LOT/CONC.	USE	DATE CONT.	WELL TYPE	DEPTH (m)
89PSW025P	–	ELGIN	ALDBOURGH	3/3	P	1988	PIEZOMETER	2.33
89PSW026P	–	LAMPTON	EUPHEMIA	18/10	P	1988	PIEZOMETER	3.60
89PSW027P	–	LAMPTON	EUPHEMIA	18/10	P	1988	PIEZOMETER	3.23
89PSW028P	–	LAMPTON	EUPHEMIA	18/10	P	1988	PIEZOMETER	2.30
89PSW029P	–	LAMPTON	EUPHEMIA	18/10	P	1988	PIEZOMETER	3.59
89PSW030P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	8.71
89PSW031P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	6.86
89PSW032P	–	MIDDLESEX	CARADOC	16/8	P	1988	PIEZOMETER	10.83

D – Domestic S – Livestock I – Irrigation

stratified interbedded silty clay. Sample site 88PSW010 and 88PSW011 on either side of the Thames River, both lie in the Bothwell sand plain. These sands were deposited as a deltaic sequence of the early Thames River in the glacial Lake Warren. They are currently up to 6 m thick and form a shallow unconfined aquifer. This physiographic unit serves as an important local shallow aquifer which typically yields 14 - 45 lpm. Water is generally found between 0 and 6 m.

Piezometer sample sites 89PSW001P - 88PSW032P are spread within the townships of Aldbourgh, Caradoc, and Euphemia. Piezometer sites 88PSW001P through 88PSW020P, and 88PSW030P through 88PSW032P are located in the Ekfrid Clay plain; the same physiographic unit as domestic well site 88PSW009. Sites 88PSW021P through 88PSW025P are on the same site as domestic well site 88PSW010 (Bothwell Sand plain), and piezometer sites 88PSW026P to 88PSW029P are on the same site as 88PSW011, (Bothwell Sand plain).

1989

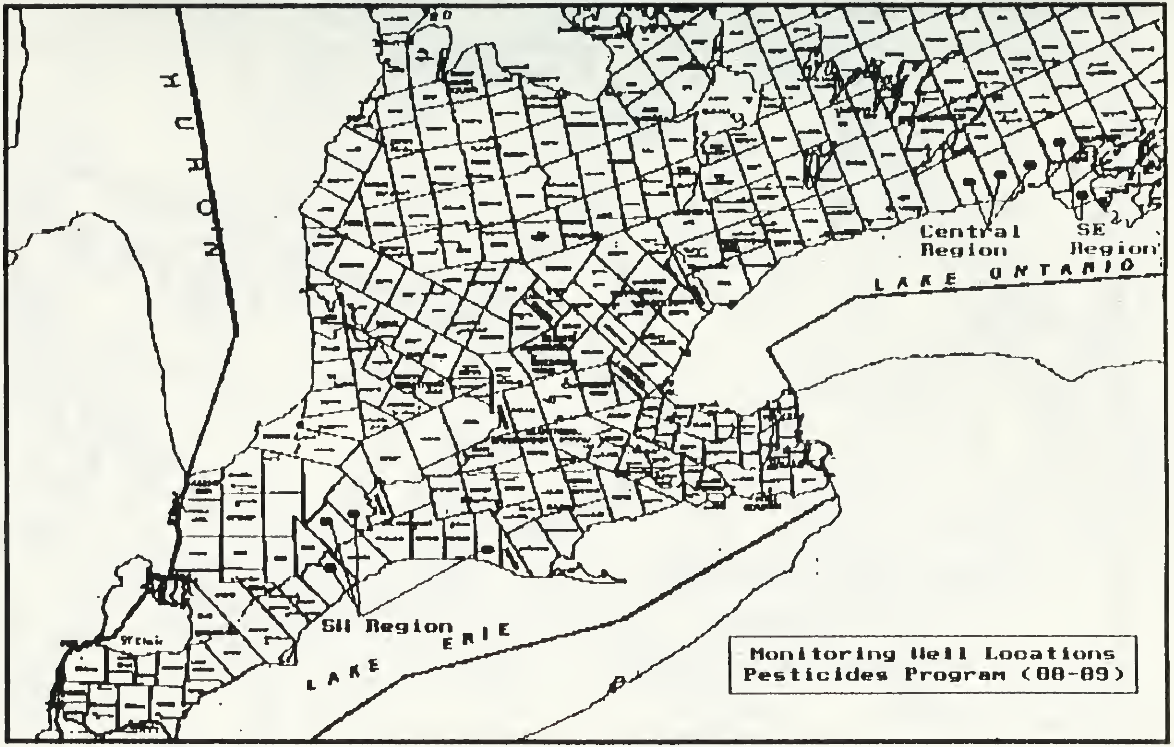
Sites 88PSW001 to 88PSW008B were dropped from the program in 1988. Sample sites 88PSW009, 88PSW010 and 88PSW011 were maintained and domestic sample sites 89PSW012 and 89PSW013 were added. Piezometer sites 89PSW001P to 89PSW032P were also maintained in 1989. Domestic well sample site 89PSW012 is located on the piezometer 88PSW001P - 4P site (Ekfrid Clay), and domestic well sample site 89PSW013 is located just west of piezometer site 88PSW017P - 20P, (Ekfrid Clay). All other locations are as in the 1988 program year described above.

2.3.2 Central Region

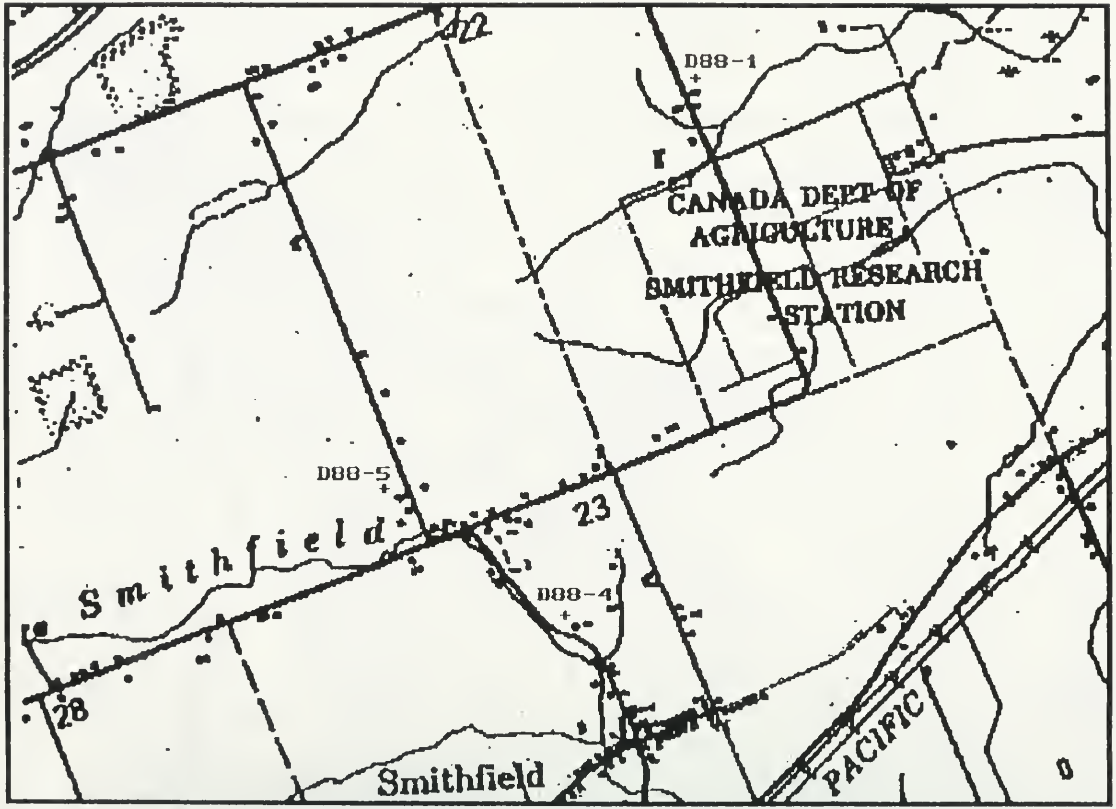
Sample sites are located on Figure 2 and summarized in Table IV

In the 1988 program, the Central region monitored 9 domestic well sites. The results of previous years indicated non-detectable levels of pesticides. Thus all sitings were changed for the program year 1988. Samples sites 88PC001 through 88PC010 are located in the County of Northumberland, in the Townships of Murray, Haldimand, Brighton and Cramahe. All sample sites are located within the drumlinized sandy till plain of the South Slope. Low levels of pesticides were detected in well 86PC009 in the 1986 program. Although no pesticides were detected in 87PC009 in 1987, sample sites were relocated in 1988 close to this site in 1988. It was necessary to confirm whether the occurrence was site specific or a true groundwater pesticide occurrence. Sample site 87CP009 was dropped from the program in 1988.

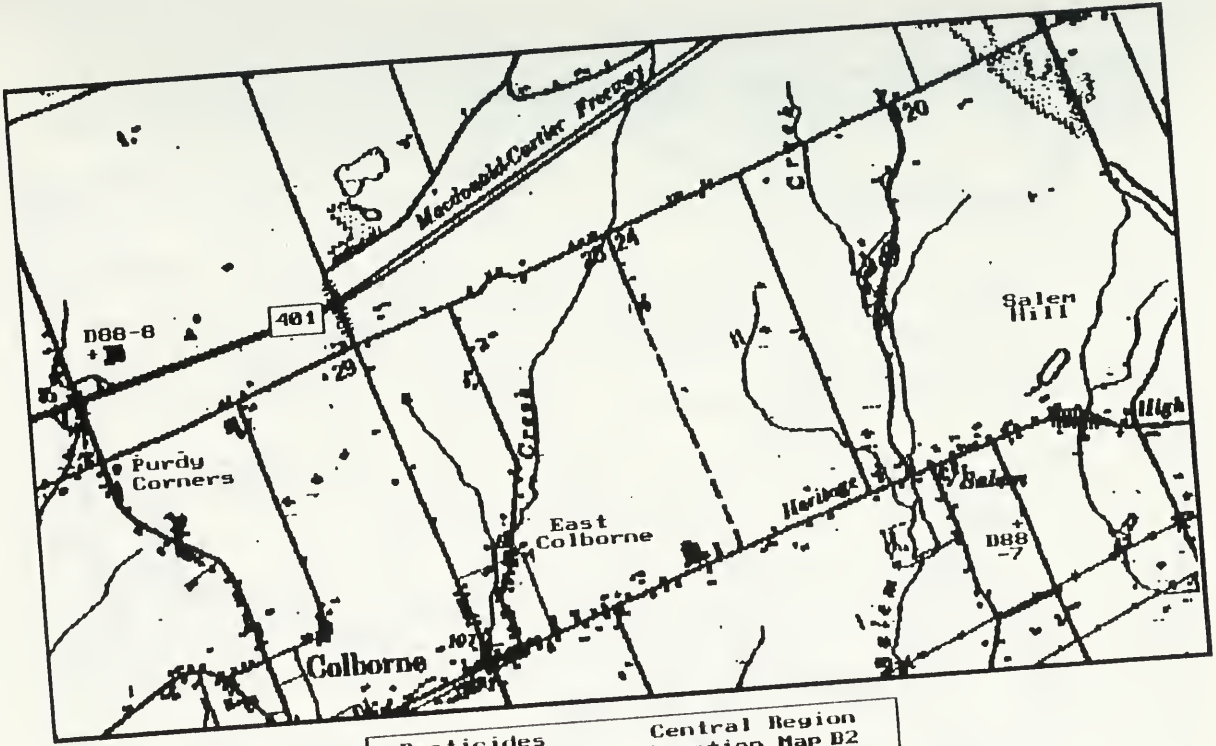
The South Slope is the southern slope of the Oak Ridges Moraine. The soil consists of sandy tills which are highly calcareous (Chapman and Putman 1984).



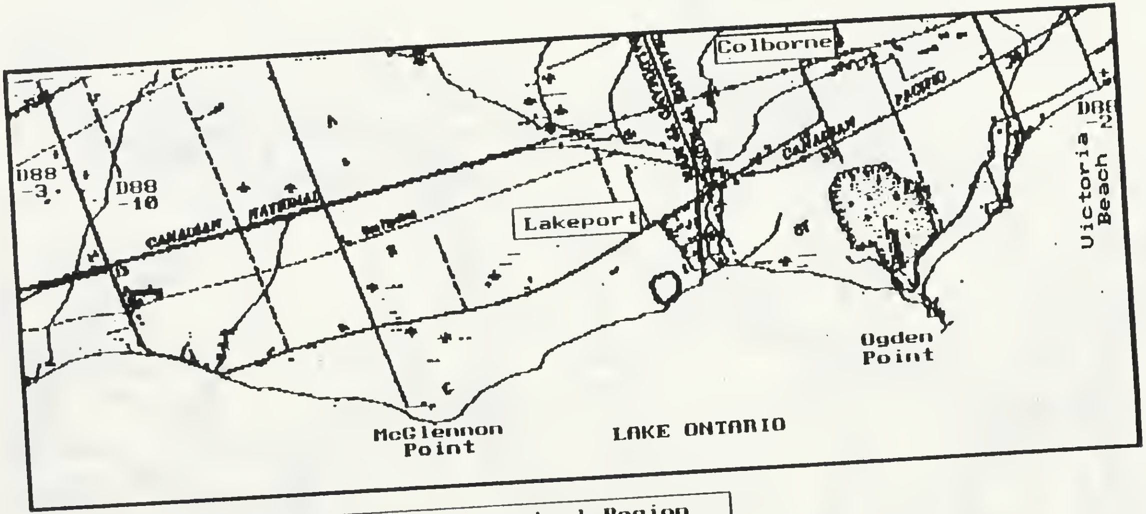
Monitoring Well Locations
Pesticides Program (88-89)



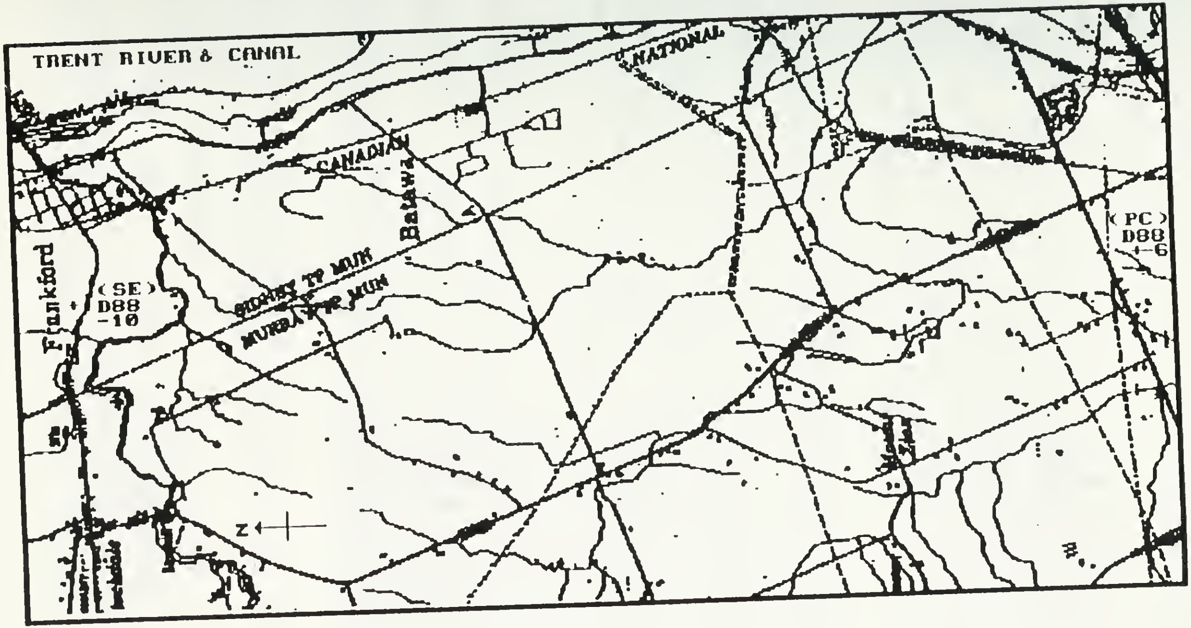
Pesticides Report 88-89
Central Region Location Map B1



Pesticides Report 88-89
Central Region Location Map B2



Pesticides Report 88-89 Central Region Location Map B3



Pesticides Report 88-89

Central & Southeast Region
Location Map B4

SE: Southeast
PC: Central

TABLE IV

SUMMARY OF WELL DATA FOR CENTRAL REGION

SITE NO.	WELL RECORD	COUNTY	TOWNSHIP	LOT/CONC.	USE	DATE CONT.	WELL TYPE	DEPTH (m)
88PC001	–	NORTHUMBERLAND	MURRAY	21/1	D	1987	BORED	3
88PC002	–	NORTHUMBERLAND	CRAMAHE	PT26/BF	D	1976	DRILLED	7.6
88PC003	–	NORTHUMBERLAND	HALDIMAND	14/A	D	1983	BORED	7.6
88PC004	–	NORTHUMBERLAND	BRIGHTON	23/24/A	D	1960	BACKHOE	3.7
88PC005	–	NORTHUMBERLAND	BRIGHTON	25/1	D	N/A	DRILLED	N/A
88PC006	–	NORTHUMBERLAND	BRIGHTON	5/2	D	1986	BORED	SPRING
88PC007	–	NORTHUMBERLAND	CRAMAHE	21/1	D	1985	DRILLED	N/A
88PC008	–	NORTHUMBERLAND	CRAMAHE	32/3	D	1987	BACKHOE	5.5
88PC010	–	NORTHUMBERLAND	HALDIMAND	13/A	D	1958	DRILLED	18.3

D – Domestic S – Livestock I – Irrigation

The Cental regions program was terminated in 1989 due to continued negative results with respect to pesticide occurrence.

2.3.3 Southeast Region

All sample sites in the Southeast region 1988 program, were located in the Township of Hillier, Prince Edward County. The sample site locations were all changed from the 1987 program due to the fact that most of the wells sampled appeared to receive multi-source contamination and true levels of pesticide contamination could not confidently be isolated for analysis. Many occurences remained suspect. It was felt that the domestic wells used in the 1987 program were not suitable to the program and were unrepresentative of actual groundwater quality conditions.

More than half of Prince Edward County has shallow soils, that is soils with less than 0.76 metres and mostly only a few centimetres of unconsolidated material over the bedrock. The profile development of these soils are conditioned by lack of depth and water holding capacity. In Hillier Township however, the surface strata of the Lindsay Formation, which underlies the whole area, are thinly bedded and have shale partings which have disintegrated to some depth. They are referred to as "clay or limestone gravel" (Chapman and Putman 1984). Water wells in these surficial deposits respond rapidly to precipitation as is exhibited in the large variation in water levels.

The ten sample sites number 88SE001 - 88SE010 are summarized on Table V and locations on Figure 3.

1989 saw the termination of the pesticide program for Southeast region due to increased restraints on resources.

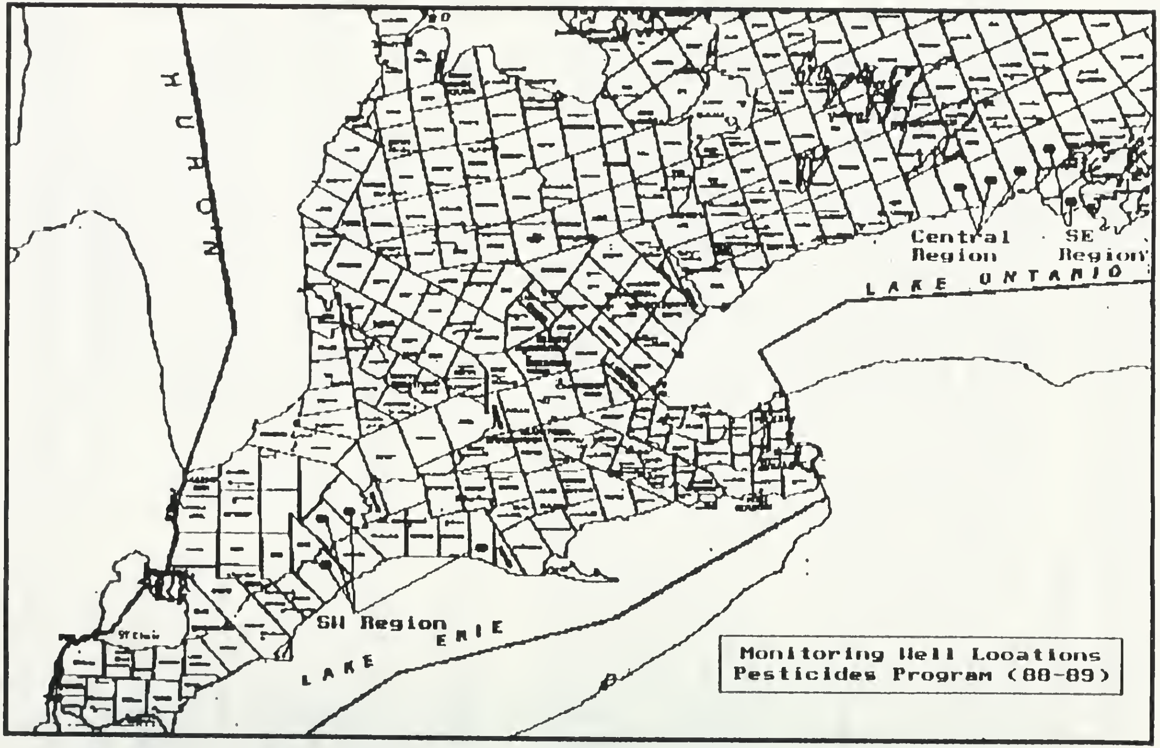
Water samples collected for major ion chemistry and bacterial analysis followed the protocol described in the MOE 1985 protocols for sampling.

Samples were returned to the lab on the same day of sampling where they were refrigerated until analyzed.

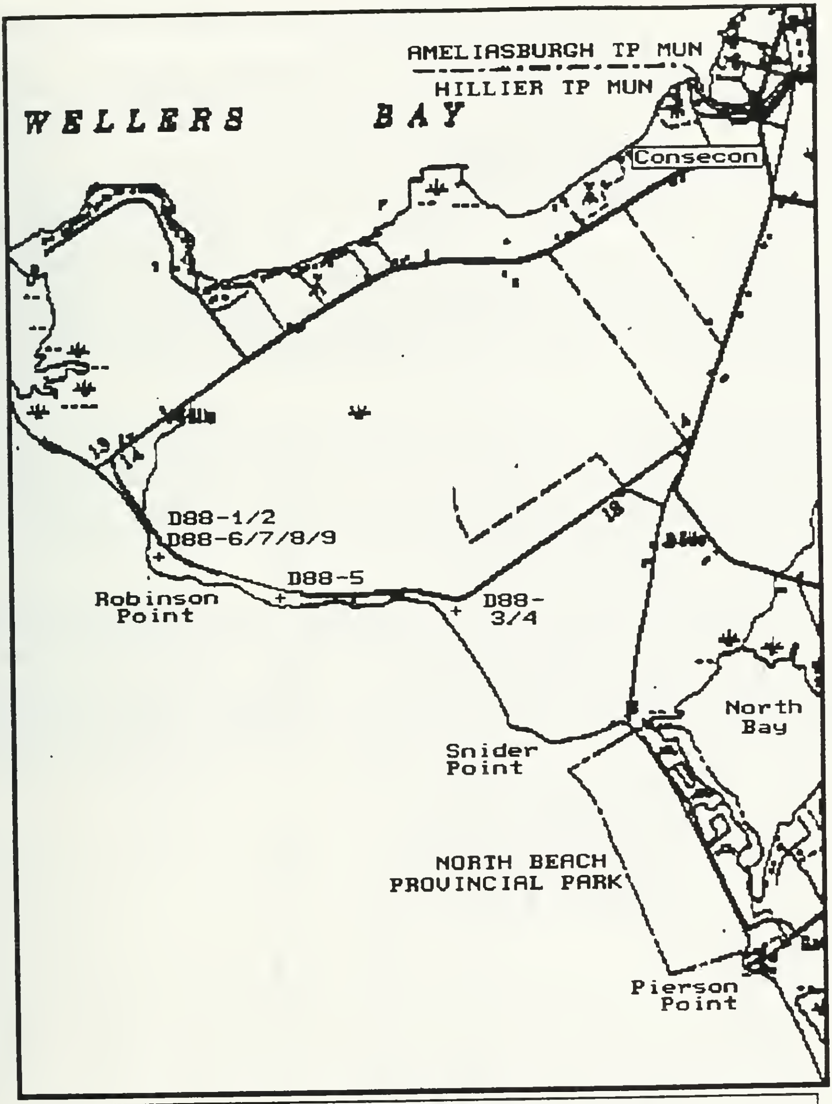
2.4 Sampling Protocol

The Sampling protocol is described in Appendix 1.

Water samples for pesticide analysis were collected in clean amber glass bottles without filtering or acidification and without prior rinsing of the sample bottle.



Monitoring Well Locations
Pesticides Program (88-89)



Pesticides
Report 88-89

Southeast Region
Location Map C1

TABLE V

SUMMARY OF WELL DATA FOR SOUTHEAST REGION

SITE NO.	WELL RECORD	COUNTY	TOWNSHIP	LOT/CONC.	USE	DATE CONT.	WELL TYPE	DEPTH (m)
88SE001	–	PRINCE EDWARD	HILLIER	15/STINTSON	D	1979	DRILLED	11.6
88SE002	–	PRINCE EDWARD	HILLIER	15/STINTSON	D	1972	DRILLED	10.6
88SE003	–	PRINCE EDWARD	HILLIER	18/STINTSON	D	1973	DRILLED	19.8
88SE004	–	PRINCE EDWARD	HILLIER	18/STINTSON	D	1963	DRILLED	19.8
88SE005	–	PRINCE EDWARD	HILLIER	16/STINTSON	D	1973	DRILLED	N/A
88SE006	–	PRINCE EDWARD	HILLIER	15/STINTSON	D	N/A	DRILLED	N/A
88SE007	–	PRINCE EDWARD	HILLIER	15/STINTSON	D	1968	DRILLED	10.6
88SE008	–	PRINCE EDWARD	HILLIER	15/STINTSON	D	1970	DRILLED	18.3
88SE009	–	PRINCE EDWARD	HILLIER	15/STINTSON	D	1973	DRILLED	N/A
88SE010	–	HASTINGS	SIDNEY	A/5	M	1974	DRILLED	18.9

D – Domestic S – Livestock I – Irrigation M – Municipal

2.5 Sample Parameters and Frequency of Sampling

A list of sample parameters is presented in Table VI. Pesticide sampling in 1988/89 were done on a weekly basis in Southwest region and on a fortnightly basis for other regions.

In 1988, as in the 1987 program, Southeast region sent samples for the analysis of the triazine group of pesticides, alachlor and metalachlor to OMAF's lab in Guelph.

Pesticide samples from Central and Southwest regions were sent to the MOE lab in Rexdale for the analysis of the triazine group pesticides, alachlor, metalachlor, chlorophenoxy, carbamates, phenyl urea and organophosphate pesticides. A small number of duplicate pesticide samples were submitted to the OMAF lab in Guelph.

In 1988, samples for major ion chemistry were taken weekly then fortnightly in Southwest region, fortnightly in Central region, and monthly in Southeast region. The regional MOE labs in London and Kingston carried out these analyses for their respective regions while the MOE Rexdale Lab conducted analyses for the Central region.

Bacterial analyses were conducted by MOE in London for the Southwest region; MOH Kingston for Southeast Region and the Peterborough District Health Unit for Central Region.

In 1989, Southwest region continued to have its pesticide analyses conducted at MOE (Rexdale) lab, and its major ion chemistry and bacterial analyses done at MOE London.

TABLE VI

CHEMICAL AND MICROBIOLOGICAL SAMPLING PARAMETERS

1. General Chemistry

Calcium
Magnesium
Sodium
Potassium
Hardness
Iron
pH
Specific conductance

Alkalinity
Chloride
Sulphate
Nitrate
Nitrite
Kjeldahl nitrogen
Ammonia
Phosporous

2. Microbiology

Total Coliform
Fecal Coliform
Background Coliform
Standard Plate Count

3. Pesticides

Triazine Group

Atrazine
D-ethyl atrazine
Cyanazine:Bladex
Metribuzin:Sencor
Prometryne
Simazine
D-ethyl simazine
Propazine
Prometone
Ametryne
Alachlor
Metalachlor

Carbamates

N-Methyl
Thio
EBDC

Chlorophenoxy Group

2, 4 - D
Dicamba
Fenoprop
2,4,5 - T
2, 4 - DB
Picloram

Phenyl Urea Grp.

Metoxuron
Monuron
Chlorotoluron
Diuron
Difenoxuron
Monolinuron
Linuron
Patoran
Metabromuron
Chlorbromuron
Siduron
Neburon

Organophosphates

Azinphosmethyl
Chlorpyrifos
Diazinon
Dichlorvos
Ethion
Malathion
Methyl Parathion
Methyl Trithion
Mevinphos
Parathion
Phorate
Reldan
Ronnnel

3.0 ANALYTICAL METHODS

Samples for pesticides were analyzed following the MOE and OMAF procedures outlined in Appendix 2 and Appendix 3 respectively.

4.0 RESULTS

4.1 Introduction

Results of the geochemical analyses are given in Appendix 5. The number of wells reporting the occurrence is broken down by region and is shown on Tables VIII through XII. Only wells with an positive occurrence of parameters sampled, are presented in these tables. All other wells in the programs had negative or non-detectable results.

Major ion chemistry reflects land use, aquifer heterogeneity and variation in well depth. Major ion chemistry data for respective regions are presented in appendix 5.

Maximum Acceptable Concentrations (MACs) and Interim Maximum Acceptable Concentrations (IMACs) for triazine pesticides and metalachlor have been prepared by the Federal-Provincial Subcommittee on Drinking Water and are reported in Guidelines for Canadian Drinking Water Quality (Health and Welfare 1989 - See Appendix 6).

		Concentration (ug/L)
Atrazine	IMAC	60
Cyanazine	IMAC	10
Simazine	IMAC	10
Metribuzin	MAC	80
Metalachlor	IMAC	50

The local Medical Officers of Health were kept informed of any well which exceeded provincial drinking water objectives (see Appendix 6 for Drinking Water Objectives). As in previous years, homeowners were sent a copy of all the results of testing on their well along with an information package on well construction, maintenance and groundwater quality.

TABLE VII

NUMBER OF WELLS REPORTING OCCURRENCE OF PESTICIDE BY REGION

1988	Southwest	Central	Southeast	Total
Total No. of Sample Sites	45	9	9	63
Atrazine	24	1	10	35
D-ethyl Atrazine	23	1	8	32
Metalochlor	1	0	0	1
Cyanazine	0	0	0	0
Simazine	3	N.S	N.S	3
D-ethyl Simazine	11	N.S	N.S	11
Other Triazines	3	N.S	N.S	3
Chlorophenoxy Compounds	3	0	N.S	3
Organophospate Compounds	0	0	N.S	0
Phenyl Urea Compounds	1	0	N.S	1
Carbamate Compounds	3	0	N.S	3
No. of Sites exceeding IMAC or MAC	0	0	0	0

N.S. - Not Sampled

TABLE VIII

NUMBER OF WELLS REPORTING OCCURRENCE OF PESTICIDE BY REGION

1989	Southwest	Central	Southeast	Total
Total No. of Sample Sites	37	0	0	37
Atrazine	19	-	-	19
D-ethyl Atrazine	15	-	-	15
Metalachlor	N.S	-	-	0
Cyanazine	N.S	-	-	0
Simazine	0	-	-	0
D-ethyl Simazine	6	-	-	0
Other Triazines	2	-	-	2
Chlorophenoxy Compounds	0	-	-	0
Organophospate Compounds	0	-	-	0
Phenyl Urea Compounds	0	-	-	0
Carbarmate Compounds	0	-	-	0
No. of Sites exceeding IMAC or MAC	0	-	-	0

N.S. - Not Sampled

4.2 Analysis of Duplicate Samples

Duplicate samples for pesticide analysis were done where results appeared to be inconsistent with current trends or sampling technique protocol was questionable. Duplicates could only be evaluated for samples from Southwest region. These samples were sent to OMAF lab in Guelph.

4.3 Southwest Region

A summary of pesticide occurrence in Southwest Region for sample years '88 and '89 are presented in Table IX and X respectively.

In 1988/89, with the installation of the piezometers, results appear to reflect more pesticide occurrence than with previous years. Concentrations of those pesticides however, are distinctly lower. Very few wells over this report period showed occurrences of pesticides other than atrazine and its metabolite d-ethyl atrazine. This report hence, will focus on these two more common pesticides.

Nine of the 13 domestic wells and 20 of the 32 piezometers sampled had detectable levels of pesticides in 1988. In 1989, the numbers were 3 out of 5 and 17 out of 32, respectively. For the 1988 results, all levels found in domestic wells are well below the Ontario Drinking Water Objectives and most individual concentrations were below 0.5 ppb. With the exception of 5 piezometer sites in '88 and 4 in '89, concentrations for atrazine and d-ethyl atrazine, where detected, range between 0.010 and 7.10 ppb within both years. These sites mentioned above warrant further consideration and will be discussed in the following section. Pesticide concentration results for piezometers 7, 9, 10, and 28 ('88 - '89), are presented graphically in Figures 4 through 8.

In 6 domestic wells, total coliform bacteria exceeded 10 counts/100 ml on at least one occasion in 1988, while fecal guidelines were exceeded at least once in 3 domestic wells (88PSW002, 3 and 7A).

In 1988, the results of piezometers 88PSW007P, 88PSW009P - 88PSW011P, and 88PSW028P, reflected relatively high levels of atrazine and or its metabolite, d-ethyl atrazine. Note that the Guidelines for Canadian Drinking Water Quality were never exceeded (See Appendix 6 for Guidelines). Levels range from 0.08 to 29.15 ppb (atrazine) and 29.60 to 42.75 ppb (d-ethyl atrazine). Piezometers 7, 10, and 11 are the same site. Note: 2) Piezometers 26, 27, and 29 are on the same site as piezometer 28 but showed no detectable levels of pesticides.

In 1989, the concentration levels of pesticides in piezometer 7 dropped off considerably from the previous year. Concentrations

TABLE IX

SUMMARY OF SAMPLE SITES REPORTING PESTICIDE OCCURENCE – SOUTHWEST REGION 1988

SITE NO.	ATRAZINE # +ve	RANGE OF CONCENTRATION ppb	D-E ATRAZINE # +ve	RANGE OF CONCENTRATION ppb	OTHER TRIAZINES # +ve	METALOCHLOR # +ve	ALACHLOR # +ve
88PSW001	1	0.16	3	0.13 – 0.46	–	–	–
88PSW004	5	2.6 – 12.0	5	0.84 – 5.20	–	5	–
88PSW005	1	0.20	0	–	–	–	–
88PSW006	7	0.1 – 0.63	5	0.26 – 0.50	–	–	–
88PSW007A	4	0.26 – 0.40	3	0.26 – 0.33	–	–	–
88PSW008A	1	0.16	3	0.06 – 0.63	–	–	–
88PSW008B	1	0.16	1	0.30	–	–	–
88PSW009	2	0.22 – 0.28	0	–	–	–	–
88PSW011	6	0.76 – 1.19	6	0.63 – 1.70	–	–	–
88PSW001P	0	–	2	0.91 – 1.62	–	–	–
88PSW002P	1	0.09	1	1.20	1	–	–
88PSW003P	0	–	1	0.14	–	–	–
88PSW004P	2	0.07 –0.16	5	0.09 – 1.50	5	–	–
88PSW005P	5	0.07 – 5.57	12	0.98 – 15.80	7	–	–
88PSW006P	10	0.16 – 0.80	11	0.89 – 2.97	9	–	–
88PSW007P	18	0.70 – 29.15	17	2.54 – 42.75	7	–	–
88PSW008P	0	–	8	0.40 – 1.36	–	–	–
88PSW009P	7	0.08 – 0.80	17	5.7 – 43.2	7	–	–
88PSW010P	2	0.08 – 0.09	13	2.65 – 22.0	2	–	–
88PSW011P	1	0.09	12	3.50 – 24.35	2	–	–
88PSW013P	0	–	1	1.08	–	–	–
88PSW016P	3	0.07 – 0.28	0	–	–	–	–
88PSW017P	1	0.15	0	–	–	–	–
88PSW019P	1	1.22	0	–	–	–	–
88PSW020P	1	2.03	0	–	–	–	–
88PSW027P	2	0.11 – 0.27	0	–	–	–	–
88PSW028P	14	9.05 – 24.64	14	3.22 – 10.45	11	–	–
88PSW029P	2	0.08 – 0.24	1	0.08	1	–	–

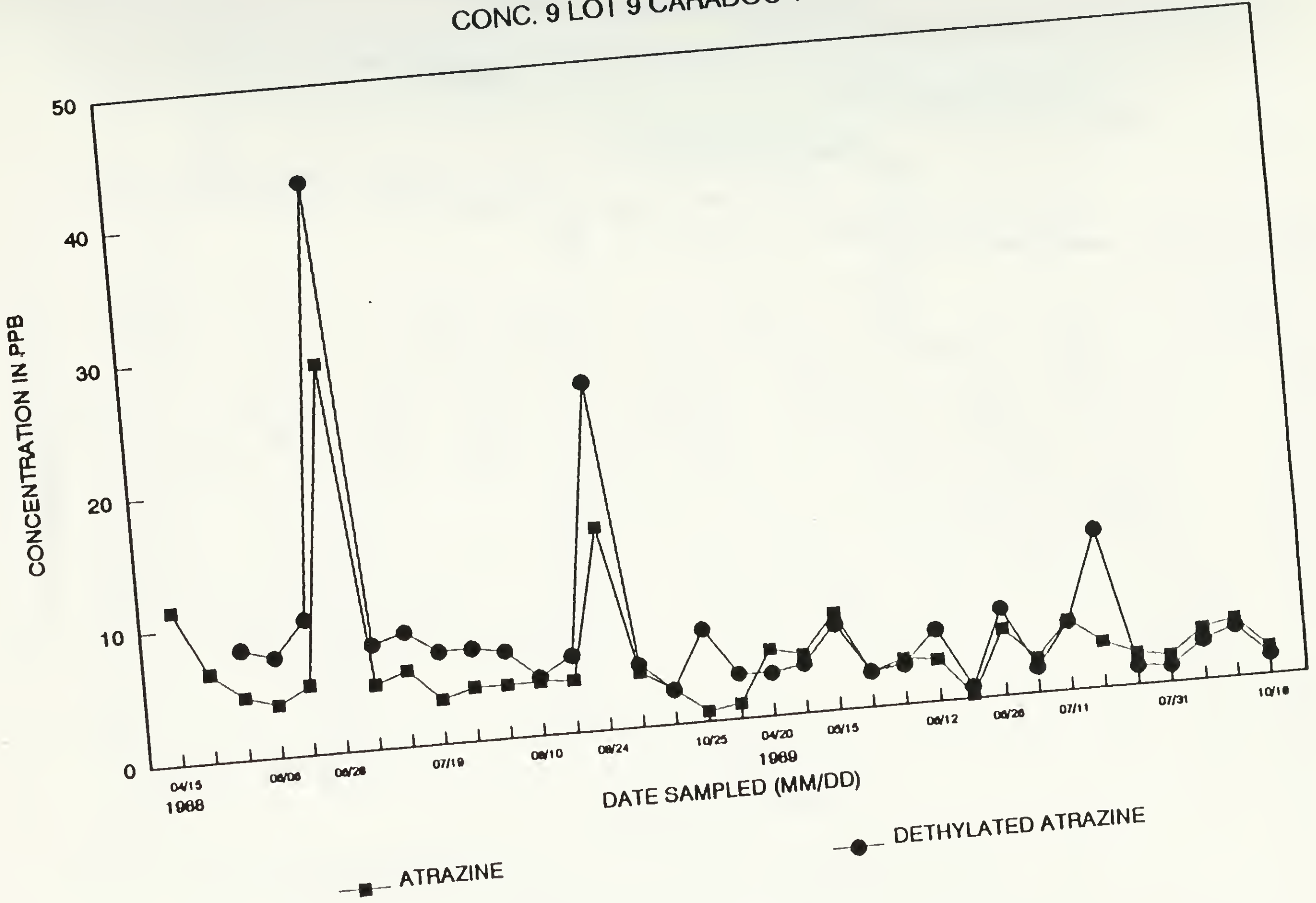
TABLE X

SUMMARY OF SAMPLE SITES REPORTING PESTICIDE OCCURRENCE – SOUTHWEST REGION 1989

SITE NO.	ATRAZINE # +ve	RANGE OF CONCENTRATION ppb	D–E ATRAZINE # +ve	RANGE OF CONCENTRATION ppb	OTHER TRIAZINES # +ve	METALOCHLOR # +ve	ALACHLOR # +ve
89PSW009	9	0.11 –0.85	3	0.26 – 0.37	–	–	–
89PSW011	6	0.23 –2.61	5	0.37 – 1.74	2	–	–
89PSW012	5	0.10 – 0.79	5	2.78 – 5.81	2	–	–
89PSW004P	1	1.44	4	0.26 – 3.01	–	–	–
89PSW005P	3	0.23 – 0.30	3	3.62 – 6.66	1	–	–
89PSW006P	3	0.22 – 0.39	3	0.65 – 1.28	1	–	–
89PSW007P	17	0.20 – 7.17	17	0.84 – 11.77	2	–	–
89PSW008P	3	0.25 – 2.34	16	0.23 – 5.49	–	–	–
89PSW009P	9	0.06 – 1.22	17	3.25 – 21.75	4	–	–
89PSW010P	4	0.05 – 0.27	17	2.85 – 24.27	2	–	–
89PSW011P	1	0.10	14	1.22 – 10.30	–	–	–
89PSW012P	1	0.20	0	–	–	–	–
89PSW014P	1	0.30	0	–	–	–	–
89PSW015P	1	0.10	0	–	–	–	–
89PSW016P	2	0.10 – 0.12	0	–	–	–	–
89PSW017P	0	–	1	0.36	–	–	–
89PSW019P	2	0.25 – 0.50	2	1.26 – 1.50	–	–	–
89PSW020P	2	0.58 – 0.64	1	0.52	–	–	–
89PSW028P	8	3.03 –26.92	8	1.46 – 4.22	–	–	–
89PSW030P	1	0.15	0	–	–	–	–

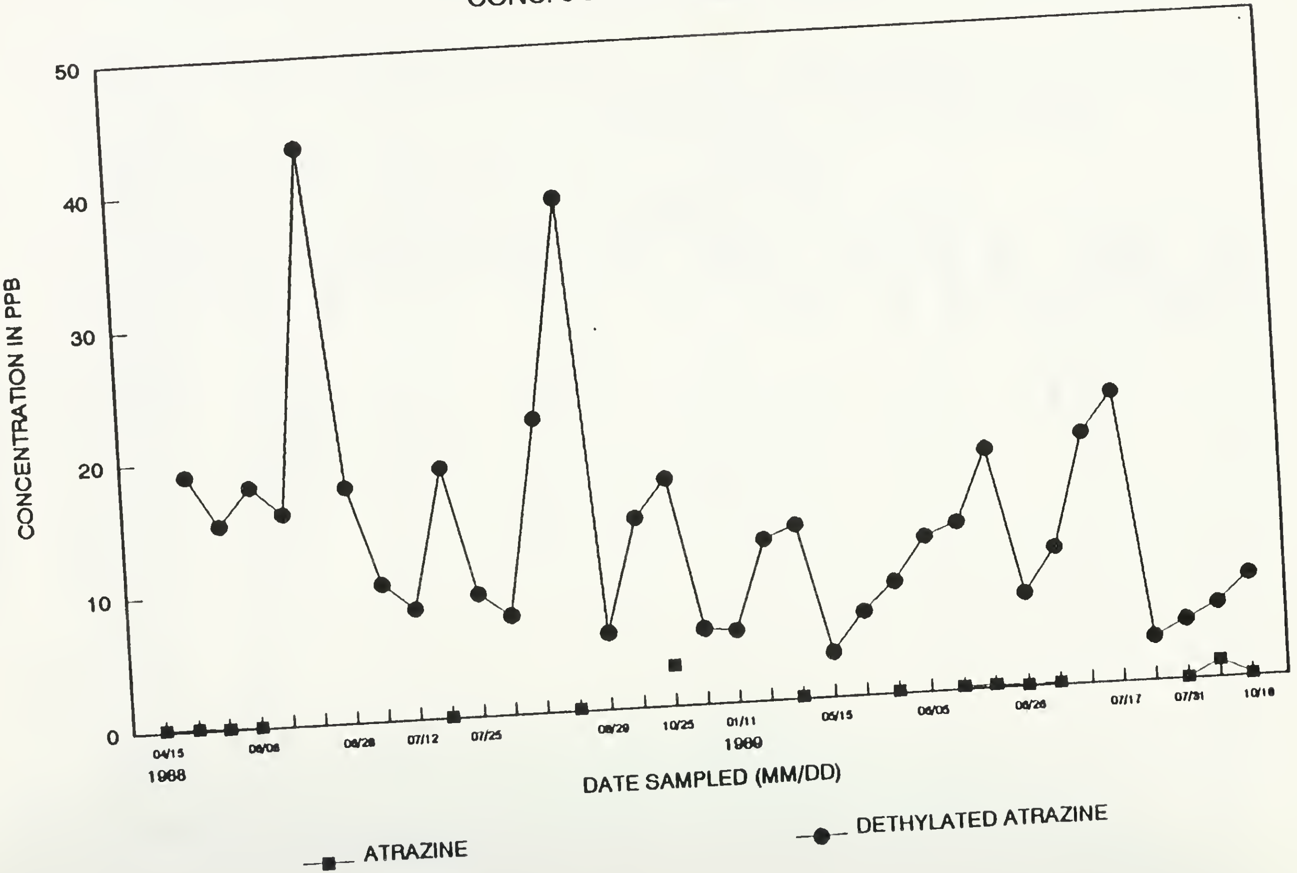
PESTICIDES DATA (TRIAZINES) P7

CONC. 9 LOT 9 CARADOC TWP.



PESTICIDES DATA (TRIAZINES) P9

CONC. 9 LOT 9 CARADOC TWP.



PESTICIDES DATA (TRIAZINES) P10

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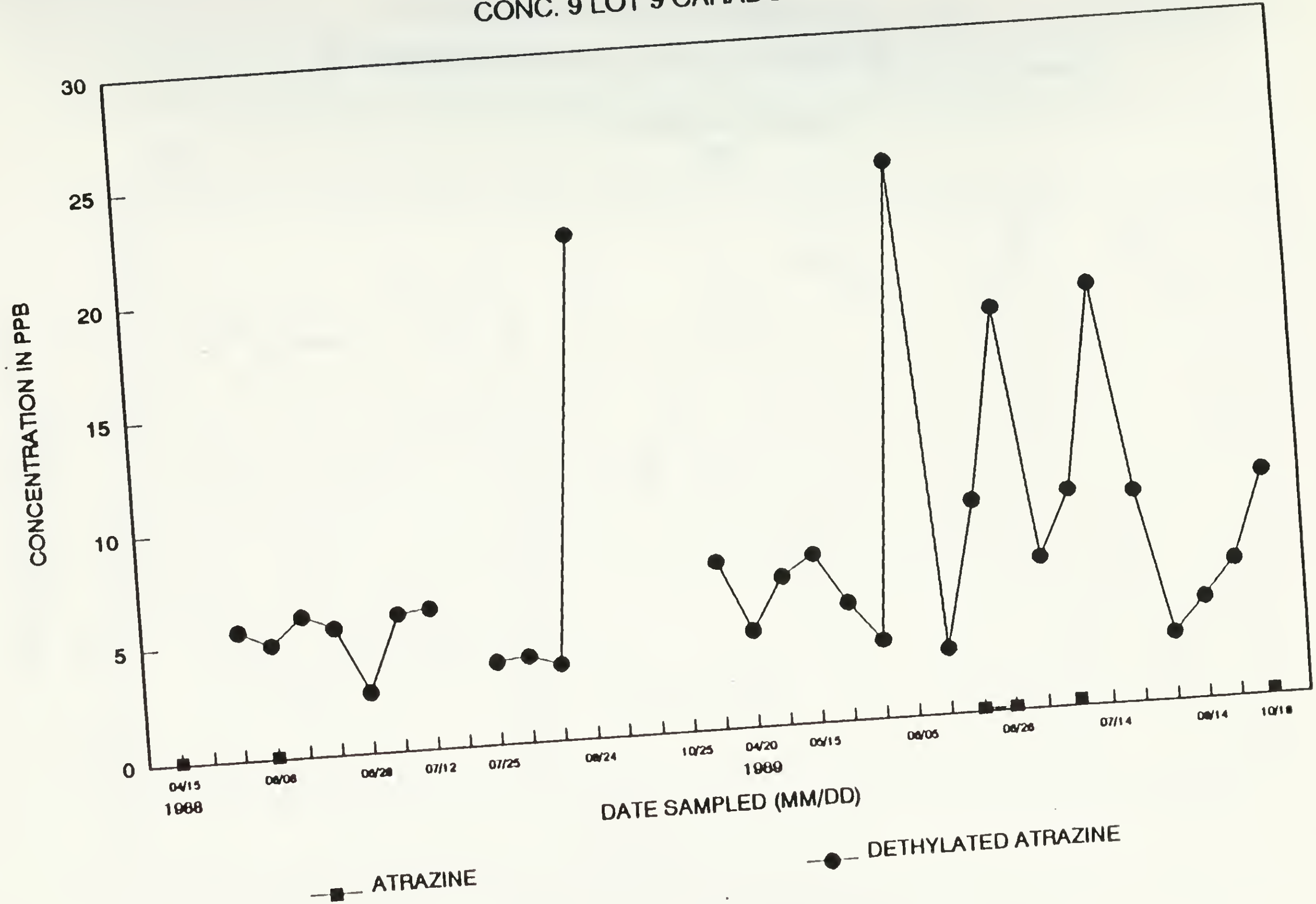
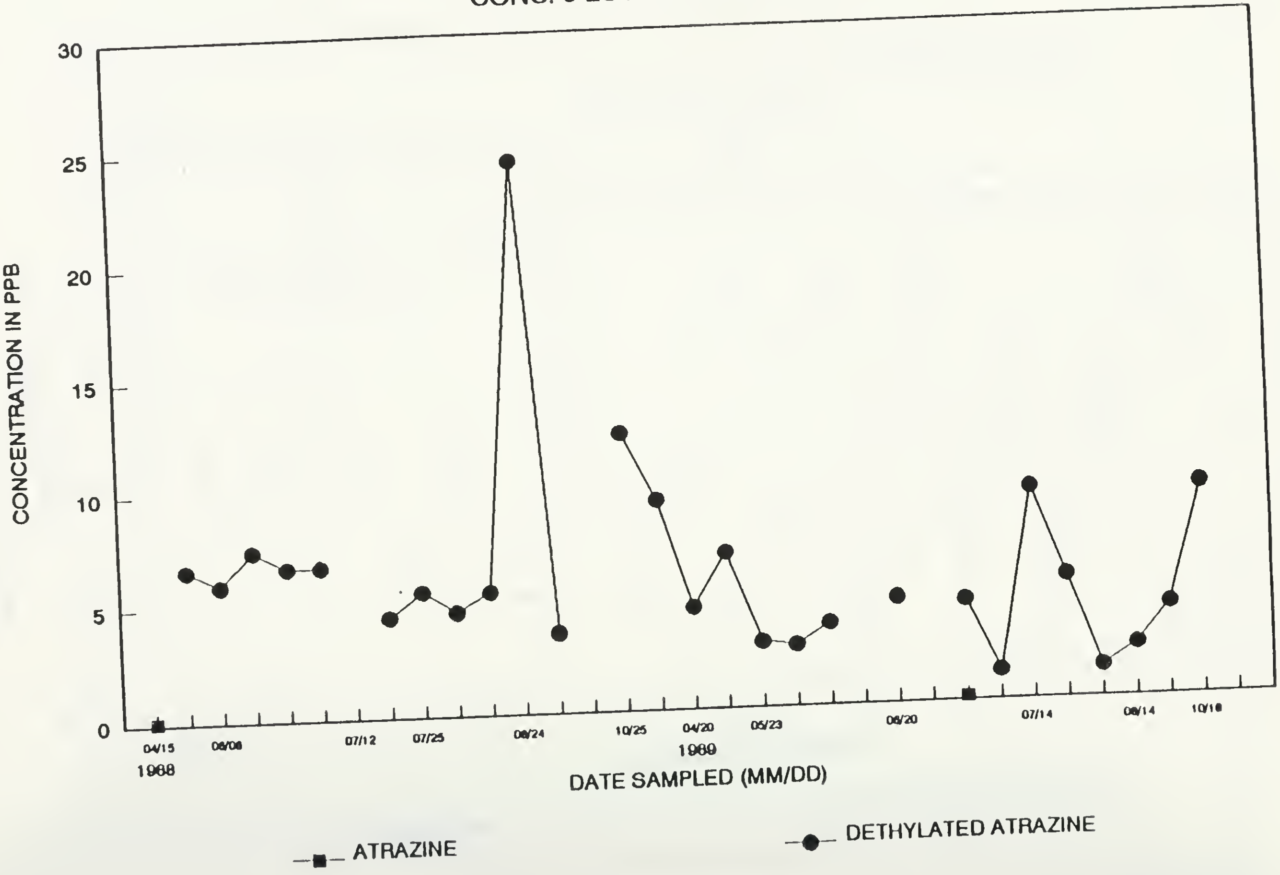


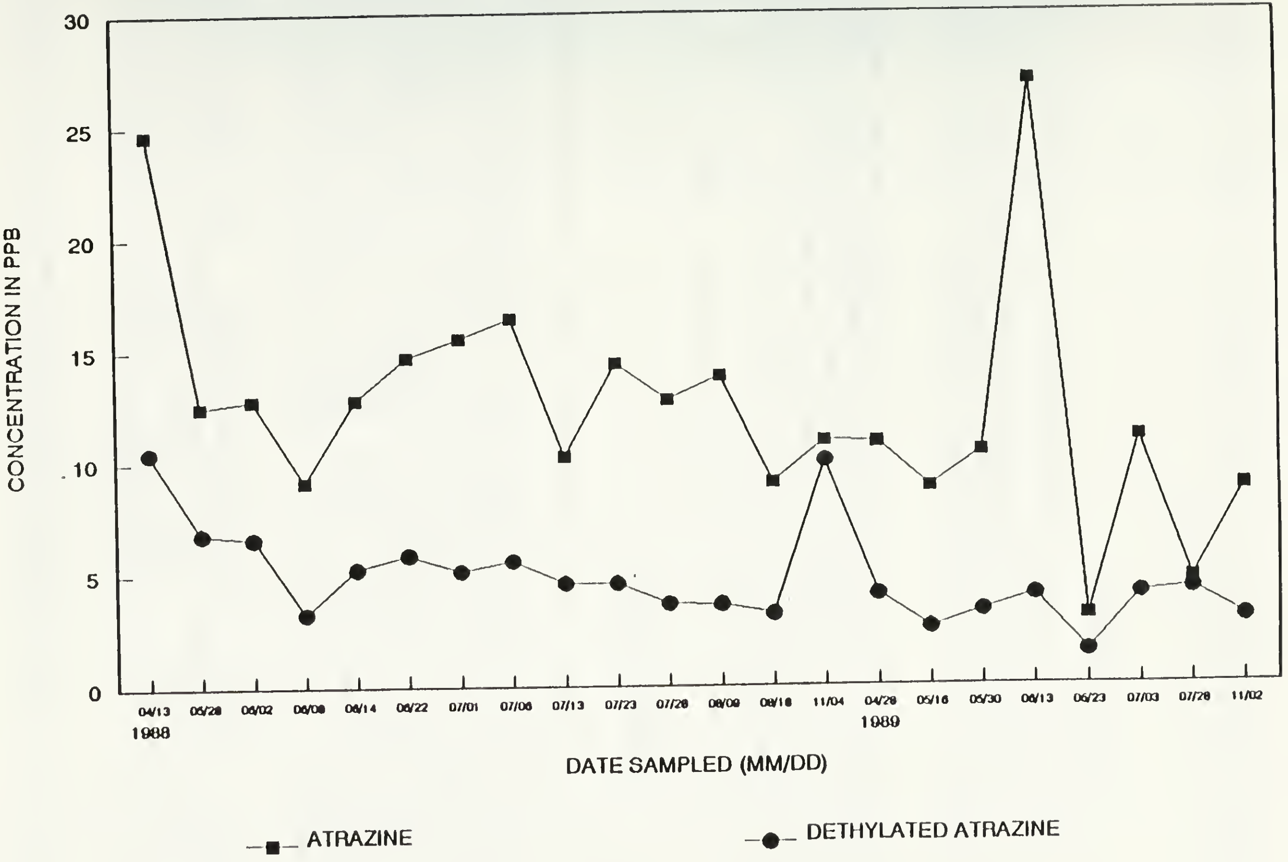
PESTICIDES DATA (TRIAZINES) P11

CONC. 9 LOT 9 CARADOC TWP.



PESTICIDES DATA (TRIAZINES) P28

CONC. 10 LOT 18 EUPHEMIA TWP.



went from as high as 42.75 ppb atrazine in 1988, to 6.34 ppb in 1989. Concentrations for piezometers 9, 10 and 11 remained high in 1989, (d-ethyl atrazine).

4.4 Central Region

Pesticide results from Central Region are summarized on Table XI.

The Central Region participated in the program up to 1988 only. In previous years few pesticides were detected. Site locations as indicated in the location summary (Table IV), were thus all changed in 1988.

The samples taken in Northumberland County, however, again only indicated the rare occurrence of pesticides. Only one site; 88CP005 had a pesticide detection for atrazine and d-ethyl atrazine. The concentration range was extremely low, (0.13 - 0.33 ppb atrazine, and 0.23 - 0.63 d-ethyl atrazine). Consequently, the region concluded its study in 1988.

The region did no bacteriological analysis in 1988.

4.5 Southeast Region

Pesticide results for the Southeast Region, are given in Table XII.

Although pesticides in Southeast region were detected in most wells during the previous sample year, concentration levels were relatively low. It was speculated that these wells may have been unsuitable to the program due to probable well construction deficiencies. This was also reflected in the high occurrence of nitrate and total and fecal coliforms in the 1987 sample year. Nonetheless, the 1987 program report concluded that persistent levels of pesticides, found in wells in the Frankford area, suggested that the aquifer itself is impacted by agricultural chemicals. All sample site locations were changed in 1988.

All the domestic well sample sites for 1988, were located in Hillier township, Prince Edward County. One municipal well; 88SE010 was sampled in 1988, and is located in Sidney Township, Hastings County. Again results from all 10 sites, showed detectable levels of pesticides. Concentrations are once again very low (0.10 - 1.5 ppb atrazine and 0.06 - 0.83 ppb d-ethyl atrazine).

Cyanazine, metalochlor and alachlor were the only other pesticides for which analyses were done. All samples indicated non-detectable levels.

TABLE XI

SUMMARY OF SAMPLE SITES REPORTING PESTICIDE OCCURRENCE – CENTRAL REGION 1988

SITE NO	ATRAZINE # +ve	RANGE OF CONCENTRATION ppb	D–E ATRAZINE # +ve	RANGE OF CONCENTRATION ppb	OTHER TRIAZINES # +ve	METALOCHLOR # +ve	ALACHLOR # +ve
88PC005	2	0.13 – 0.33	3	0.23 – 0.63	–	–	–

TABLE XII

SUMMARY OF SAMPLE SITES REPORTING PESTICIDE OCCURENCE – SOUTHEAST REGION 1988

SITE NO	ATRAZINE # +ve	RANGE OF CONCENTRATION	D–E ATRAZINE # +ve	RANGE OF CONCENTRATION	OTHER TRIAZINES # +ve	METALOCHLOR # +ve	ALACHLOR # +ve
88SE001	10	0.40 – 1.50	10	0.18 – 1.60	–	–	–
88SE002	9	0.16 – 0.86	8	0.13 – 0.83	–	–	–
88SE003	1	0.30	0	–	–	–	–
88SE004	1	0.10	1	0.06	–	–	–
88SE005	1	0.23	0	–	–	–	–
88SE006	3	0.23 – 0.36	3	0.40 – 0.53	–	–	–
88SE007	1	0.30	1	0.26	–	–	–
88SE008	3	0.16 – 0.30	2	0.36 – 0.46	–	–	–
88SE009	2	0.80 – 1.20	2	0.12 – 1.60	–	–	–
88SE010	3	0.23 – 0.46	2	0.30 – 0.46	–	–	–

Total and fecal coliform bacteria exceeded guidelines in 3 wells (88SE002, 3, 7) and 1 well (88SE007) respectively.

Elevated nitrate levels were noted in several wells and provincial objectives were exceeded in 3 wells (88SE001, 3, 9). Sodium exceeding 20 mg/L occurred in 4 wells (88SE004, 5, 7, 8).

The Region concluded its study in 1988, as the very low levels were not considered to be of immediate concern. Other concerns were of more priority to which resources necessitated reallocation.

5.0 DISCUSSION

5.1 Southwest Region

In 1988 and 1989, piezometers 7, 9, 10 and 11, all sited in Caradoc Township, Concession IX, Lot 9 registered high levels of atrazine and or d-ethyl atrazine, (although not above the Drinking Water Guidelines - See Appendix 6). It was thought that these readings were a result of increased rainfall and high water table conditions during those years. Corn was the cultivated crop on this site during those years with atrazine as the main pesticide in use. With higher rainfall, residuals that normally would be locked in soil pore space are more easily released into groundwater supplies.

It is interesting to note that during 1989, concentrations in piezometer 7 dropped off, and none of the other piezometers in the area appear to have been affected (piezometers 1-6, 9-20 and 30-32). Piezometers 10 and 11 however, are deeper than 7 and 9 and may be separated by clay interbedding from the shallower more susceptible sandy aquifer. Also, groundwater flow is suspected to be from the north toward 9, 10 and 11, but from the north west toward 7 which is in the southeast corner of the site. Two separate plumes may be the case. During the 1990 sampling season a dump with old pesticide containers was discovered to the north of these affected sites. Hence, these readings may to be site specific, but this has not been confirmed.

The other site with significant readings was piezometer site 28, located in Lampton County, Euphemia Township. Corn was planted in 88/89 using again mainly atrazine. Site 28 at a depth of 2.3 meters is located down gradient of groundwater flow on this site. Piezometers 26, 27, and 29 are also on this site and registered no elevations in pesticide concentrations. Site 28 is also closest to the domestic well on the site, which is 3 metres down gradient

of piezometer 28 and approximately the same dept
discovered that the owner's son conducted a 4-H pestic
using atrazine during this period. Containers for the
filled adjacent to piezometer 28. A local spill is
be the cause for these readings.

All piezometers with significant readings demonstr
occurrence peaks during each year. The results of
9, 10, 11 and 28 over 1988/89 are presented in graph

Generally it may be said though, with the exception
discussed above which appear to be site specific,
88/89 saw slightly more occurrence of pesticides
years in the Southwest region. Concentrations were
elimination of the previous years' domestic wells,
subject to extraneous disturbances.

1988/89 results confirm the previous years' all
groundwater is impacted by certain persistent pestic
is the pesticide of most concern due to it
persistency. The impact of this and other pesti
appear to be cumulative in this area however,
outflows are constant in these sandy soils. The
ethyl atrazine is even more persistent and results
gradual release over time.

5.2 Central Region

As discussed in the location section of this r
locations in Central Region were changed in 1988 f
year. Six of these sites were apple orchards a
four planted corn. The carbamate and triazine
pesticides of interest. Pesticides nonetheless w
one well. This non occurrence in comparison to
be explained by a few factors. Firstly sample si
Central region are located in far less sandy soi
for infiltration and dispersion of these pestic
Secondly, it is clear now that crop rotation
practised in this region, is a strong influe
impact. Corn is often rotated with pumpkins, gr

As in previous years nitrate and sodium levels
system development / agricultural practises
chemicals respectively, are relatively high.

5.3 Southeast Region

All 9 sites in Southeast region are located
County, Hillier Township. The area concentrated
during the 1988 sample year, with atrazine an
pesticides in question. All sites discussed

coast of Lake Ontario with groundwater flow flowing from cultivated fields towards the sample sites.

All wells reported occurrences of pesticides. The levels range between 0.06 and 1.6 ppb (atrazine/d-ethyl atrazine). Other pesticides sampled for were not detected.

Although levels of pesticide occurrence remain low, the persistency found in all wells suggest that the aquifer itself is being impacted by agricultural chemicals.

6.0 CONCLUSIONS

1. Continued cccurrences of persistent, though low levels of pesticides in Southwest and Southeast Regions, indicate an impact on shallow groundwater supplies.
2. With the use of piezometers in the Southwest region, pesticide occurrences versus number of sample sites, for the sample year 88/89, is similiar to that of previous years. Pesticide concentrations are in general however lower. Based on the fact that the programs sampling point integrity was improved, through the installation of piezometers, these results may reflect a more realistic picture of actual aquifer impact.
3. Atrazine and its metabolite, d-ethyl atrazine are the pesticides of most concern due to their persistency in these shallow groundwater aquifers.
4. Pesticide occurrence remains relatively low in Central region because of the following reasons:
   (i) the soils at sample sites are tills with lower sand content than other regions in the program. The soils are less susceptible to contamination,

   (ii) farmers in this area rotate their crops on a more regular basis thereby reducing the cumulative impact of pesticides on groundwater supplies
5. Low but persistent levels of pesticides in the Southeast region indicate an impact by agricultural chemicals.
6. Spills and mishandling of chemicals, remains an issue of concern, in the contamination of regional aquifers.

7.0 RECOMMENDATIONS

The 1988/89 pesticide study eliminated the uncertainties associated with domestic well sampling. Results of previous years provide evidence that contamination may be caused in these wells by other factors such as poor well siting, poor well installation techniques, improper well maintenance or mishandling of chemicals. As a result, bacteriological occurrence is not as dominant in this mostly piezometer sampling site program. Results of the 88/89 program indicate that although concentration levels remain low, it is clear that groundwater is being impacted by the use of agricultural chemicals. Consequently it is recommended that:

1. A Best Management Practice pilot study be initiated on one of the surveyed sites in Southwest region. Best management practises include post emergence as versus pre emergence pesticide application, reduction in pesticide loadings and use of less persistent chemicals. Monitoring should continue to assess concentration levels.

2. Monitoring should continue to assess the cumulative impact of pesticide use in the Southwest region.

3. Public education on the importance of domestic well maintenance and proper handling and storage of agricultural chemicals should be continued.

4. The Southeast region may consider retaining a number of wells for pesticide monitoring in identified sensitive areas to assess the cumulative impact of agricultural pesticides on groundwater supplies.

5 Education programs such as Grower certification and Provincial publications should include information to alert pesticide applicators of the potential for groundwater contamination and the conditions of soil type and depth that are most susceptible.

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APPENDIX I
PESTICIDES MONITORING PROGRAM
1988
GROUND WATER PROTOCOL

Site Selection Criteria

1. Representative Areas.

   The following criteria formed the basis for the selection of representative areas for the 1988 pesticides in ground water monitoring program.

   i) The area is subject to heavy applications of pesticides related to the cultivation of corn, soybean crops, or intensive cash cropping.

   ii) The area contains hydrogeological conditions that indicate a relatively high potential for the contamination of local ground water from pesticide application. This includes unconfined aquifers in sand plain or fractured bedrock areas and shallow confined aquifers in similar areas.

2. Specific Well Sites.

   The following criteria should be applied in the selection of specific monitoring wells.

   i) Depending on availability, wells used for private and/or municipal drinking water purposes should be considered. A water well survey data sheet is to be completed for each well selected and permission obtained from the owner for sampling.

   ii) Well sites should be situated adjacent to and hydraulically downgradient from cultivated fields where pesticides are applied.

   iii) Only wells that appear to be properly constructed, sealed and maintained should be selected.

iv) The land surface around the well should be graded such that surface drainage is away from the well.

v) Wells in well pits should be avoided.

vi) The wells should be located away from potential sources of contamination such as barnyards or buildings where agricultural chemicals may be stored or mixed or where machinery is cleaned.

vii) Each Region will assign a well code number to each well.

3. Sampling Points

The following criteria should be applied to the selection of specific sampling points or taps at each selected monitoring well site.

i) Select a tap that is as close to the well or pressure system as possible and use the same tap throughout the sampling program. Report any changes.

ii) Select a tap that by-passes any water treatment or filtering devices, and is free of a nozzle aerator or filter.

iii) Make sure the tap is accessible for the duration of the program, especially if the owner is not home. Provide the owner with a proposed sampling schedule.

(iv) Do not sample from a hose.

Sampling Protocol

1. Pre-sampling Procedure

The following procedure should be followed at each site prior to the collection of a water sample.

i) Let the tap run for at least 3 minutes to flush the system.

ii) Continue running tap until well pump is activated or manually activate well pump.

iii) Collect sample while well pump is operating.

2. General Chemistry Sampling

i) Use a one litre, clear glass bottle per sampling event.

ii) Label bottle with name of owner, well code and date sampled.

iii) Refer to Laboratory sample submission book for instructions on filling and storing.

iv) Ship bottles to local MOE Lab with proper submission forms.

3. Pesticides Sampling

i) Use a one litre clear glass or amber glass bottle per sampling event.

ii) Label bottle with name of owner, well code and date sampled.

iii) Fill bottle completely; do not rinse prior to taking sample.

iv) Ship all ground water samples, as soon as possible to OMAF Lab or MOE Lab with proper submission forms.

4. Microbiology Sampling

i) Use one glass, 250 ml, presterilized bottle containing sodium thiosulphate per sampling event. Do not touch bottle top or cap.

ii) Label bottle with name of owner, well code and date sampled.

iii) Do not rinse bottle; fill to mark.

iv) Refrigerate and ship to local MOE Lab as soon as possible with proper submission forms.

Sampling Parameters and Frequency

Listed below are the specified parameters to be analyzed for each water sample collected and the frequency of sampling.

1. General Chemistry.

    - Calcium
    - Magnesium
    - Sodium
    - Potassium
    - pH
    - Fe
    - Alkalinity
    - Sulphate
    - Chloride
    - Ammonia
    - Nitrate Nitrogen
    - Kjeldahl Nitrogen
    - Specific Conductance

Samples are to be taken and analyzed once per month for each sampling site.

2. Pesticides

    - to be decided based on pesticide use in study area.

Samples are to be taken and analyzed once per week for each sampling site.

3. Microbiology.

    - Total Coliform
    - Fecal Coliform

Samples are to be taken and analyzed at the same frequency as the pesticide sample.

PB/avf/sw/ls
30931-010.1
DWS-89/90.1

i) Let the tap run for at least 3 minutes to flush the

WELL WATER SURVEY DATA SHEET (1988)

GEOGRAPHIC LOCATION

Name: ______________________ Sample Site No.: __________
(pesticide monitoring well only)

Lot: _____ Conc.: _____ Township: ______________ County: ______________

Mailing Address: ______________________________________

Postal Code: ______________ Telephone: ______________

WELL DATA CONSTRUCTION

Date Constructed: ______________ Well Record: Yes _______ No _______
Number ______________

Type: Dug or Bored _____ Drilled _____ Sandpoint _____ Other _____

Casing Type: _______ Diameter _______ Depth _______ Sealing _______
Top _______ Static Level _______

Surface flow: Well Elevated Above Grade Yes _______ No _______ Ft. ____
Surface Water Directed Away from Well Yes _______ No _______

WELL LOCATION

From building: ______________ From adjacent field: ______________

From pond, stream: ______________ From tile drains: ______________

WATER SYSTEM

Sampling point (specific tap): ______________________________

Water treatment type: ______________ Sample tap before treatment:
Yes __________ No __________

Water usage: house ____ barn ____ house & barn ____ irrigation ____

Volume per day used: ________ (gal/day)

PESTICIDE USEAGE

Spray tank filling: Yes ____ No ____ If yes, distance (ft.) from well for filling _____ mixing _____

Has a spill occurred? What __________________ When ______________

Soil Type:
Clay ___ Sand ___ Loam ___ Clayloam ___ Sandloam ___ Other __________

Crops adjacent to well: Corn ____ Soys ____ Other ________________

Closest distance from well to crop: _________

Chemicals used in fields adjacent to well: (application rate)

1988:	Lasso	____	1987:	Lasso	____
	Atrazine	____		Atrazine	____
	Dual	____		Dual	____
	Other	________________		Other	________________

Type of farm operation:
Dairy: ___ Beef ___ Hog ___ Poultry ___ Other ____________________

Mixed: ___ Cash Crop ___ Greenhouse ___ Other ____________________

Comments: (access problems)

____
____
____
____
____
____

Map (provide sketch on back). Photo: Yes ___ No ___

APPENDIX 2

MINISTRY OF THE ENVIRONMENT ANALYTICAL PROCEDURE FOR THE DETECTION OF TRIAZINE HERBICIDES IN WATER

APPENDIX 2

MINISTRY OF THE ENVIRONMENT ANALYTICAL PROCEDURE FOR THE DETECTION OF TRIAZINE HERBICIDES IN WATER

Triazine herbicides have been used as selective herbicidesfor several crops, such as corn ans soybeans. Triazine herbicides are also used in the non-agricultural field for industrial weed and brush control. Triazines are highly selective due to their ability to inhibit photo sysnthesis in specific plants. Triazines are also highly persistent in soil and may interfere with normal crop rotation. Certain crops, such as tobacco and sugar beet, are highly susceptible to triazines.

Principle method: Samples are solvent extracted, dried and evaporated to dryness. The extract is examined by gas chromatography using a thermionic specific detector.
The triazine herbicides routinely analyzed are as follows: Prometone, Atraton, Propazine, Atrazine, Prometryne, Simazine, Ametryne, Sensor, Bladex, Metalochlor, and Alachlor.

The results are reported in ug/L or other units depending on concentration. Detection Criteria in ug/L are as follows

Prometone	0.05	Simazine	0.05	Atrazine	0.05
Atraton	0.05	Ametryne	0.05	Propazine	0.05
Sensor	0.10	Bladex	0.10	Prometryne	0.05
Metalochlor	0.05	Alachlor	0.50		

D-Ethyl Atrazine and D-Ethyl Simazine are also detected by this scan.

Sample Requirements: Samples must be collected in 1 L, brown glass bottles with foil or teflon lined screw caps to prevent contamination. These bottles are solvent rinsed prior to use and are labelled, "For Pesticides and PCB Analysis Only". A minimum sample size of 800 mL is required. Samples should be refrigerated at 4 oC to avoid bacterial degradation. No preservatives should be used.

Extraction Procedure

All samples undergo an addition of base (KOH) followed by solvent extraction and solvent concentration prior to Gas Chromotographic analysis. The column clean-up step has been eliminated due to the relatively clean nature of the water samples which are being tested.

On receipt, shake samples vigorously.

Make up one blank and one spike to be processed along with each set of samples.

Add Potassium Hydroxide Solution to the samples, spike and blank, basic (pH 12).

Using the plunger type pipettor dispenser add 80 mL of CH_2Cl_2 to each sample, spike and blank.

Place the bottles on the roller and roll for 30 minutes at 90-100 rpm.

Rinse the 250 mL round bottom flasks and Erlenmeyer flasks with 25 mL of CH_2Cl_2; swirl the CH_2Cl_2 in the flask and collect the wash in a pre-rinsed round bottom flask. Repeat with second 25 mL aliquot of CH_2Cl_2.

Rinse the 25 mL graduated measuring pipettes with 80 mL of CH_2Cl_2 by drawing CH_2Cl_2 up each pipette and add this wash to the rlask wash.

Remove the bottles from the roller and siphon off the lower CH_2Cl_2 layer using a pre-rinsed 25 mL pipette and the in-house vacuum line system. Place the CH_2Cl_2 layer in a labelled, rinsed, Erlenmeyer flask.

Use one pipette for each sample and leave pipette standing in the appropriate Erlenmeyer flask after the extract is drawn off.

Measure and note the sample volumes.

Set up the necessary number of filter funnels, with folded phase separator papers, and pour approximately 20 mL of CH_2Cl_2 through each filter.

Filter the samples, spike and blank from the Erlenmeyer flasks through the phase separator filter.

Rinse each Erlenmeyer flask with 10 mL of CH_2Cl_2 and pass the rinse through the appropriate filter funnel.

Add 2 mL of $(CH_3)_3CCH_2CH(CH_3)_2$ to the extracts in the round bottom flasks.

Rinse the rotary flash evaporator with a small amount of CH_2Cl_2 before evaporating any samples. Set up the 250 mL round bottom flasks containing sample, spike, blank, or glassware rinse on the rotary flash evaporator and concentrate to approximately 1 mL.

Add 5 mL of $(CH_3)_3CCH_2CH(CH_3)_2$ to each flask. Evaporate to dryness on the rotary evaporator.

Add 2 mL of $CH_3CHOHCH_3$ using an Eppendorf pipette. Let the sample sit for about 5 minutes before transferring the extract to the screw cap vials for Gas Chromatographic analysis.

DETECTION SYSTEM

Reagents

Gas, carrier, ultra pure nitrogen, 4 mL/minute.
Gas, make-up, ultra pure nitrogen, 30 mL/minute.
Gases, flame, extra dry air, 175 mL/minute; pre-purified hydrogen, 4.5 mL/minute.

Equipment

Traps, gas: hydrocarbon; oxygen; and moisture.
Chromotograph, Gas, Varian, Model 3700.
Columns, Dual Capillary, fused silica:

30 m DBWAX: .25 mm bore
.25 um coating
30 m DB1701: .25 mm bore
.25 um coating.

Detectors, TDS, dual.

Settings for Gas chromatograph

Attenuation: 1 X 10-$_{12}$
Injector Temperature: 200$_0$C
Detector Temperature: 300$_0$C
Temperature Program : Initial 100$_0$C for 0 minutes
: Rate 4$_0$C/minute
: Final 240$_0$C for 2 minutes.

APPENDIX 3

DESCRIPTION OF ANALYTICAL TECHNIQUE FOR PESTICIDE ANALYSIS BY OMAF LAB

The method used for our herbicide screen is that as described on the attached page. Gas chromatographic analysis was performed primarily on capillary machines with packed column machines used as alternates. Conditions are indicated on a separate page which is also enclosed.

The following indicates various recoveries for acetanilide and triazine herbicides routinely analyzed in our herbicide scan. The acetanilides which include alachlor and metolachlor have recoveries from 92 to 109% with standard deviations of 6.4 to 8.2 at fortification levels of 0.25 to 20 ug L^{-1} (ppb). Triazines which include atrazine, d-atrazine, simazine, d-simazine prometryn and metribuzin show recoveries ranging from 72 to 112% with a maximum standard deviation of 12% over the fortification range of 0.125 to 10 ug L^{-1} (ppb). Cyanazine is slightly more variable and ranges from 102 to 124% over the range of 0.25 to 20 ug L^{-1} (ppb) with a standard deviation which ranges from 12 to 16%. Our detection limit for these herbicides in water is 0.1 ppb.

EXTRACTION OF TRIAZINE RESIDUES IN WATER

1. Transfer a measured volume (approx 1000 mL) of sample water into a 2000 mL sep. funnel.

2. Adjust pH to 9 by adding a few drops of Ammonium hydroxide (dil 1:2.5).

3. Add 100 mL of chloroform ($CHCl_3$) and shake for 1 min.

4. Let layers separate, then drain the chloroform phase through a piece of ($CHCl_3$) pre-washed and dried cotton into a 500 mL boiling flask.

5. Repeat extraction with 100 mL of $CHCl_3$.

6. Evaporate the combined $CHCl_3$ extracts on a rotary evaporator (50-60°C water bath) almost to dryness.

7. Add to the residue 10 mL of iso-octane and continue evaporation to dryness.

8. Dissolve the triazine residue in 5 mL of methanol.

9. Use for GLC system to quantitate the residues.

APPENDIX 4

ANALYTICAL DETECTION LIMITS FOR PESTICIDES

Experimental Conditions and Equipment

Gas Chromatograph:	Perkin-Elmer 8320B Capillary	
Detector:	Nitrogen/Phosphorus	
Column:	J & W SE54 0.25 mm x 15 m 0.25 um film thickness Chromatographic Specialties	
Carrier Gas:	He 20 psi head pressure 30 cm sec^{-1} linear velocity	
Oven Profile:	Temperature 1	60°C
	Hold	1 minute
	Ramp Rate 1	20°min^{-1}
	Temperature	150°C
	Hold	0 minute
	Ramp Rate 2	5°C min^{-1}
	Temperature	220°C
	Hold	2 minutes
Injector Temperature:		225°C
Detector Temperature:		300°C
Injection:	2 ul, split 10:1	
Alternate:	Tracor 550 Gas Chromatograph Hall Detector - Nitrogen Mode Packed Column: 2.0 mm ID x 1.2 m Carbowax 20 M @ 190°C isothermal.	

APPENDIX 4

ANALYTICAL DETECTION LIMITS FOR PESTICIDES

TRIAZINE PESTICIDES

	MOE LAB (ppt)	OMAF LAB (ppb)
atrazine	50	.10
d-ethyl atrazine	-	.10
cyanazine	100	.10
simazine	50	.10
d-ethyl simazine	-	.10
propazine	50	.10
metribuzin	100	.10
prometon	50	-
ametryne	50	-
prometryne	50	.10

ACETANILIDE PESTICIDES

	MOE LAB (ppt)	OMAF LAB (ppb)
metolachlor	500	.10
alachlor	500	.10

CHLOROPHENOXY PESTICIDES

	MOE LAB (ppt)
dicamba	50
2,4-D	100
2,4DB	200
2,4DP	100
2,4,5T	50
fenoprop	20
picloram	100

PHENYL UREA PESTICIDES	MOE LAB (ppt)
metoxuron	2.0
monuron	2.0
chlortoluron	2.0
fluometuron	2.0
diuron	2.0
difenoxuron	2.0
monolinuron	2.0
linuron	2.0
patoran	2.0
metabromuron	2.0
chlorbromuron	2.0
siduron	2.0
neburon	2.0

ORGANO PHOSPHATE PESTICIDES	MOE LAB (ppt)
dichlorvos	20
phorate	20
mavinphos	20
diazinon	20
ronnel	20
parathion	20
methyl parathion	50
malathion	20
ethion	20
methyl trithion	20
chlorpyriphos	20
reldan	20
azinphos methyl	2000

APPENDIX 5

GEOCHEMICAL RESULTS FOR GROUNDWATER SAMPLES

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW005	OMAF	88-05-04	<2	<2	<2	ND	ND	–	–	–	ND
88PSW005	OMAF	88-05-17	–	–	–	ND	ND	–	–	–	ND
88PSW005	OMAF	88-05-31	<2	<2	<2	ND	ND	–	–	–	ND
88PSW005	OMAF	88-06-13	<4	<4	<4	ND	ND	–	–	–	ND
88PSW005	OMAF	88-06-27	<4	<4	<4	ND	ND	–	–	–	ND
88PSW005	OMAF	88-07-12	<2	<2	<2	0.20	ND	–	–	–	ND
88PSW005	OMAF	88-07-26	4	4	<2	ND	ND	–	–	–	ND
88PSW005	OMAF	88-08-08	<4	<4	<4	ND	ND	–	–	–	ND
88PSW005	OMAF	88-08-22	<2	<2	<2	ND	ND	–	–	–	ND
88PSW006	OMAF	88-05-04	<2	4800	<2	0.10	ND	–	–	–	ND
88PSW006	OMAF	88-05-17	2	4800	<2	0.26	0.39	–	–	–	ND
88PSW006	OMAF	88-05-31	10	1180	<2	0.36	0.46	–	–	–	ND
88PSW006	OMAF	88-06-13	88	4800	<2	0.26	ND	–	–	–	ND
88PSW006	OMAF	88-06-27	16	4160	<2	0.63	0.50	–	–	–	ND
88PSW006	OMAF	88-07-12	4	4140	<2	0.23	0.28	–	–	–	ND
88PSW006	OMAF	88-07-26	138	32	<2	ND	ND	–	–	–	ND
88PSW006	OMAF	88-08-08	2300	13000	6	0.36	0.26	–	–	–	ND
88PSW006	OMAF	88-08-22	92	720	<2	ND	ND	–	–	–	ND
88PSW006	OMAF	88-08-22	86	800	<2	ND	ND	–	–	–	ND
88PSW007A	OMAF	88-05-04	<2	<2	<2	ND	ND	–	–	–	ND
88PSW007A	OMAF	88-05-17	<2	8	<2	ND	ND	–	–	–	ND
88PSW007A	OMAF	88-05-31	<2	<2	<2	0.26	0.33	–	–	–	ND
88PSW007A	OMAF	88-06-13	<2	<2	<2	ND	ND	–	–	–	ND
88PSW007A	OMAF	88-06-27	<2	<2	<2	ND	ND	–	–	–	ND
88PSW007A	OMAF	88-07-12	38	1740	34	0.33	0.30	–	–	–	ND
88PSW007A	OMAF	88-07-26	<2	<2	<2	0.40	ND	–	–	–	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW001	OMAF	88-05-04	<2	6	<2	ND	ND	–	–	–	ND
88PSW001	OMAF	88-05-17	<2	4	<2	ND	ND	–	–	–	ND
88PSW001	OMAF	88-05-31	10	38	<2	ND	0.46	–	–	–	ND
88PSW001	OMAF	88-06-13	4	122	<2	ND	ND	–	–	–	ND
88PSW001	OMAF	88-06-27	8	52	<2	ND	0.13	–	–	–	ND
88PSW001	OMAF	88-07-12	16	66	<2	0.16	ND	–	–	–	ND
88PSW001	OMAF	88-07-26	88	440	<2	ND	ND	–	–	–	ND
88PSW001	OMAF	88-08-08	32	106	<2	ND	0.23	–	–	–	ND
88PSW001	OMAF	88-08-22	80	200	<2	ND	ND	–	–	–	ND
88PSW002	OMAF	88-05-04	16	36	<2	ND	ND	–	–	–	ND
88PSW002	OMAF	88-05-17	32	480	<2	ND	ND	–	–	–	ND
88PSW002	OMAF	88-05-31	136	2400	<2	ND	ND	–	–	–	ND
88PSW002	OMAF	88-06-13	130	820	<2	ND	ND	–	–	–	ND
88PSW002	OMAF	88-06-27	2200	110	<2	ND	ND	–	–	–	ND
88PSW002	OMAF	88-07-26	2800	11000	2	ND	ND	–	–	–	ND
88PSW002	OMAF	88-08-08	5100	6800	2	ND	ND	–	–	–	ND
88PSW002	OMAF	88-08-22	<2	<2	<2	ND	ND	–	–	–	ND
88PSW003	OMAF	88-05-04	82	4800	56	ND	ND	–	–	–	ND
88PSW003	OMAF	88-05-17	128	720	92	ND	ND	–	–	–	ND
88PSW003	OMAF	88-05-31	50	860	14	ND	ND	–	–	–	ND
88PSW004	OMAF	88-05-04	<2	22	<2	2.60	0.84	–	–	–	0.75
88PSW004	OMAF	88-05-17	26	142	<2	3.20	1.40	–	–	–	2.60
88PSW004	OMAF	88-05-31	60	246	<2	3.00	1.60		–	–	0.89
88PSW004	OMAF	88-08-08	156	320	24	6.00	3.50	–	–	–	4.10
88PSW004	OMAF	88-08-22	52	192	40	12.00	5.20	–	–	–	8.20

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D–ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D–ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW007A	OMAF	88–08–08	<4	<4	<4	0.23	0.26	–	–	–	ND
88PSW007A	OMAF	88–08–22	192	4800	106	ND	ND	–	–	–	ND
88PSW007B	OMAF	88–05–04	<2	<2	<2	ND	ND	–	–	–	ND
88PSW007B	OMAF	88–05–17	<2	<2	<2	ND	ND	–	–	–	ND
88PSW007B	OMAF	88–05–31	<2	<4	<2	ND	ND	–	–	–	ND
88PSW007B	OMAF	88–06–27	<2	<2	<2	ND	ND	–	–	–	ND
88PSW008A	OMAF	88–05–04	<2	<2	<2	ND	ND	–	–	–	ND
88PSW008A	OMAF	88–05–17	<2	4800	<2	ND	ND	–	–	–	ND
88PSW008A	OMAF	88–05–31	<2	<2	<2	ND	0.63	–	–	–	ND
88PSW008A	OMAF	88–06–13	<2	<2	<2	ND	ND	–	–	–	ND
88PSW008A	OMAF	88–07–12	<2	186	<2	0.16	0.06	–	–	–	ND
88PSW008A	OMAF	88–08–08	<2	2	<2	ND	0.23	–	–	–	ND
88PSW008B	OMAF	88–05–04	<2	<2	<2	ND	ND	–	–	–	ND
88PSW008B	OMAF	88–05–17	<2	<2	<2	ND	ND	–	–	–	ND
88PSW008B	OMAF	88–05–31	<2	<2	<2	ND	ND	–	–	–	ND
88PSW008B	OMAF	88–06–13	<2	<2	<2	ND	ND	–	–	–	ND
88PSW008B	OMAF	88–07–12	16	70	<2	0.16	ND	–	–	–	ND
88PSW008B	OMAF	88–08–08	<2	620	<2	ND	0.30	–	–	–	ND
88PSW009	OW30–0243	88–07–14	<2	–	<2	ND	ND	ND	ND	ND	ND
88PSW009	OW31–0542	88–07–27	–	–	–	0.28	ND	ND	ND	ND	ND
88PSW009	OW33–0244	88–08–03	–	–	–	0.22	ND	ND	ND	ND	ND
88PSW009	OW37–0011	88–09–01	–	–	–	ND	ND	ND	ND	ND	ND
89PSW009	–	89–05–11	–	–	–	0.35	ND	ND	ND	ND	ND
89PSW009	–	89–05–15	<2	64	<2	0.56	0.37	ND	ND	ND	ND
89PSW009	–	89–05–23	–	–	<2	ND	ND	ND	ND	ND	ND

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89PSW009	–	89–05–26	–	–	<2	0.85	0.34	ND	ND	ND	ND
89PSW009	–	89–06–01	–	–	<2	0.36	ND	ND	ND	ND	ND
89PSW009	–	89–06–06	–	–	–	0.41	ND	ND	ND	ND	ND
89PSW009	–	89–06–21	–	–	–	0.53	0.26	ND	ND	ND	ND
89PSW009	OW29–0058	89–07–06	–	–	–	0.12	ND	ND	ND	ND	ND
89PSW009	OW30–0026	89–07–11	–	–	<2	0.11	ND	ND	ND	ND	ND
89PSW009	–	89–07–25	–	–	<2	0.14	ND	ND	ND	ND	ND
88PSW010	–	88–06–08	24	–	<2	–	–	–	–	–	–
88PSW010	OW24–0282	88–06–08	–	–	–	ND	–	ND	–	ND	ND
88PSW010	OW26–0319	88–06–22	16	–	<2	ND	–	ND	–	ND	ND
88PSW010	OW29–0007	88–07–06	4	–	–	ND	ND	ND	ND	ND	ND
88PSW010	OW30–0235	88–07–13	–	–	–	ND	ND	ND	ND	ND	ND
88PSW010	OW31–0234	88–07–23	–	–	–	ND	ND	ND	ND	ND	ND
88PSW010	OW35–0027	88–08–18	–	–	–	ND	ND	ND	ND	ND	ND
88PSW010	OW37–0164	88–09–07	–	–	–	ND	ND	ND	ND	ND	ND
89PSW010	–	89–05–16	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW010	–	89–05–25	–	–	–	ND	ND	ND	ND	ND	ND
89PSW010	–	89–05–30	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW010	–	89–06–13	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW010	OW27–0060	89–06–23	–	–	–	ND	ND	ND	ND	ND	ND
89PSW010	OW28–0015	89–07–03	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW010	OW32–0014	89–07–28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW010	OW34–0048	89–08–02	–	–	–	ND	ND	ND	ND	ND	ND
88PSW011	OW25–0262	88–06–14	–	–	–	0.85	0.63	ND	–	ND	ND
88PSW011	OW26–0325	88–06–22	<2	–	<2	0.80	1.11	ND	–	ND	ND
88PSW011	OW29–0012	88–07–06	<2	–	<2	0.76	1.13	ND	ND	ND	ND
88PSW011	OW31–0241	88–07–23	–	–	–	1.19	1.22	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

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88PSW011	OW35–0033	88–08–18	–	–	–	0.79	0.78	ND	ND	ND	ND
88PSW011	OW37–0158	88–09–07	–	–	–	0.87	1.70	ND	6.44	ND	ND
89PSW011	–	89–05–16	<2	<2	<2	1.14	0.83	ND	ND	ND	ND
89PSW011	–	89–05–30	–	–	<2	0.59	0.37	ND	ND	ND	ND
89PSW011	–	89–06–13	–	–	<2	1.61	0.67	ND	ND	ND	ND
89PSW011	OW27–0068	89–06–23	–	–	–	2.61	1.74	ND	ND	ND	ND
89PSW011	OW28–0021	89–07–03	–	–	–	2.31	1.29	ND	ND	ND	ND
89PSW011	OW32–0022	89–07–28	–	–	–	0.23	ND	ND	ND	ND	ND
89PSW012	–	89–05–17	16	640	<2	0.39	2.81	ND	ND	ND	ND
89PSW012	OW28–0010	89–06–28	–	–	<2	0.79	5.81	ND	0.44	ND	ND
89PSW012	OW30–0048	89–07–13	–	–	<2	0.10	4.70	ND	ND	ND	ND
89PSW012	–	89–07–27	–	–	<2	0.11	3.94	ND	0.39	ND	ND
89PSW012	OW38–0026	89–08–21	–	–	–	0.18	2.78	ND	ND	ND	ND
88PSW001P	OW17–0162	88–04–14	–	–	–	ND	ND	ND	ND	ND	ND
88PSW001P	OW23–0090	88–05–27	–	–	–	ND	1.62	ND	0.37	ND	ND
88PSW001P	0W23–0204	88–06–01	–	–	–	ND	0.91	ND	0.1	ND	ND
88PSW001P	0W25–0109	88–06–09	–	–	–	ND	ND	ND	ND	ND	ND
88PSW001P	–	88–06–09	<2	–	<2	–	–	–	–	–	–
88PSW001P	OW26–0181	88–06–17		–		ND	ND	ND	ND	ND	ND
88PSW001P	OW27–0087	88–06–23	<2	–	<2	ND	ND	ND	ND	ND	ND
88PSW001P	OW28–0076	88–06–30	–	–	–	ND	ND	ND	ND	ND	ND
88PSW001P	OW30–0226	88–07–15	–	–	–	ND	ND	ND	ND	ND	ND
88PSW001P	OW32–0161	88–07–29	–	–	–	ND	ND	ND	ND	ND	ND
88PSW001P	OW36–0112	88–08–26	–	–	–	ND	ND	ND	ND	ND	ND
88PSW001P	OW37–0012	88–09–01	–	–	–	ND	ND	ND	ND	ND	ND
88PSW001P	OW39–0002	88–09–14	–	–	–	ND	ND	ND	ND	ND	ND
88PSW001P	OW46–0009	88–11–01	–	–	–	ND	ND	ND	ND	ND	ND

ND = Non Detectable   – = Not Analysed

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
89PSW001P	OW17–0031	89–04–19	–	–	–	ND	ND	ND	ND	ND	ND
89PSW001P	–	89–06–16	–	–	–	ND	ND	ND	ND	ND	ND
89PSW001P	OW30–0015	89–07–19	–	–	–	ND	ND	ND	ND	ND	ND
88PSW002P	OW17–0168	88–04–14	–	–	–	0.09	ND	ND	ND	ND	ND
88PSW002P	0W23–0091	88–05–27	–	–	–	ND	ND	ND	ND	ND	ND
88PSW002P	0W23–0206	88–06–01	–	–	–	ND	1.2	ND	0.1	ND	ND
88PSW002P	–	88–06–09	2	–	4	–	–	–	–	–	–
88PSW002P	0W25–0110	88–06–09	–	–	–	ND	ND	ND	ND	ND	ND
88PSW002P	OW26–0182	88–06–17	–	–	–	ND	ND	ND	ND	ND	ND
88PSW002P	OW27–0088	88–06–23	8	–	<2	ND	ND	ND	ND	ND	ND
88PSW002P	OW28–0077	88–06–30	–	–	–	ND	ND	ND	ND	ND	ND
88PSW002P	OW30–0227	88–07–15	–	–	–	ND	ND	ND	ND	ND	ND
88PSW002P	OW32–0160	88–07–29	–	–	–	ND	ND	ND	ND	ND	ND
88PSW002P	OW36–0113	88–08–26	–	–	–	ND	ND	ND	ND	ND	ND
88PSW002P	OW37–0013	88–09–01	–	–	–	ND	ND	ND	ND	ND	ND
88PSW002P	OW39–0003	88–09–14	–	–	–	ND	ND	ND	ND	ND	ND
88PSW002P	OW39–0004	88–09–14	–	–	–	ND	ND	ND	ND	ND	ND
88PSW002P	OW46–0010	88–11–02	–	–	–	ND	ND	ND	ND	ND	ND
89PSW002P	OW17–0032	89–04–19	–	–	–	ND	ND	ND	ND	ND	ND
89PSW002P	–	89–05–26	–	–	–	ND	ND	ND	ND	ND	ND
89PSW002P	–	89–06–16	–	–	–	ND	ND	ND	ND	ND	ND
89PSW002P	OW30–0015	89–07–19	–	–	–	ND	ND	ND	ND	ND	ND
88PSW003P	0W17–0170	88–04–18		–		ND	ND	ND	ND	ND	ND
88PSW003P	0W23–0051	88–05–25	<2	–	<2	ND	0.14	ND	ND	ND	ND
88PSW003P	0W23–0206	88–06–01	–	–	–	ND	ND	ND	ND	ND	ND
88PSW003P	–	88–06–09	<2	–	8	–	–	–	–	–	–
88PSW003P	0W25–0112	88–06–09	–	–	–	ND	ND	ND	ND	ND	ND

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88PSW003P	0W25–0111	88–06–09	–	–	–	ND	ND	ND	ND	ND	ND
88PSW003P	–	88–06–09	<2	–	2	–	–	–	–	–	–
88PSW003P	OW26–0184	88–06–17	–	–	–	ND	ND	ND	ND	ND	ND
88PSW003P	OW26–0183	88–06–17	–	–	–	ND	ND	ND	ND	ND	ND
88PSW003P	OW27–0089	88–06–23	<2	–	<2	ND	ND	ND	ND	ND	ND
88PSW003P	–	88–06–23	<2	–	<2	–	–	–	–	–	–
88PSW003P	OW28–0078	88–06–30	–	–	–	ND	ND	ND	ND	ND	ND
88PSW003P	OW30–O228	88–07–15	–	–	–	ND	ND	ND	ND	ND	ND
88PSW003P	–	88–07–20	<2	–	<2	–	–	–	–	–	–
88PSW003P	–	88–07–20	<2	–	<2	–	–	–	–	–	–
88PSW003P	OW31–0244	88–07–21	–	–	–	ND	ND	ND	ND	ND	ND
88PSW003P	OW32–0162	88–07–29	–	–	–	ND	ND	ND	ND	ND	ND
88PSW003P	OW36–0111	88–08–26	–	–	–	ND	ND	ND	ND	ND	ND
88PSW003P	OW37–0014	88–09–01	–	–	–	ND	ND	ND	ND	ND	ND
88PSW003P	OW46–0006	88–11–01	–	–	–	ND	ND	ND	ND	ND	ND
88PSW003P	OW46–0007	88–11–01	–	–	–	ND	ND	ND	ND	ND	ND
89PSW003P	OW17–0033	89–04–19	–	–	–	ND	ND	ND	ND	ND	ND
89PSW003P	OW19–0005	89–05–17	–	–	–	ND	ND	ND	ND	ND	ND
89PSW003P	OW19–0006	89–05–17	–	–	–	ND	ND	ND	ND	ND	ND
89PSW003P	–	89–05–24	–	–	–	ND	ND	ND	ND	ND	ND
89PSW003P	–	89–06–02	–	–	–	ND	ND	ND	ND	ND	ND
89PSW003P	–	89–06–02	–	–	–	ND	ND	ND	ND	ND	ND
89PSW003P	–	89–06–16	–	–	–	ND	ND	ND	ND	ND	ND
89PSW003P	–	89–06–28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW003P	OW30–0020	89–07–14	–	–	–	ND	ND	ND	ND	ND	ND
89PSW003P	OW30–0017	89–07–19	–	–	–	ND	ND	ND	ND	ND	ND
89PSW003P	OW30–0018	89–07–19	–	–	–	ND	ND	ND	ND	ND	ND
88PSW004P	0W17–0171	88–04–18	–	–	–	0.16	ND	ND	ND	ND	ND

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88PSW004P	OW23–0052	88–05–25	36	–	<2	ND	1.50	ND	0.18	ND	ND
88PSW004P	0W23–0208	88–06–01	–	–	–	ND	1.20	ND	0.17	ND	ND
88PSW004P	OW23–0207	88–06–01	–	–	–	ND	0.91	ND	0.10	ND	ND
88PSW004P	OW25–0113	88–06–09	–	–	–	0.07	0.70	ND	ND	ND	ND
88PSW004P	–	88–06–09	14	–	<2	–	–	–	–	–	–
88PSW004P	OW26–0185	88–06–17	–	–	–	ND	0.60	ND	0.06	ND	ND
88PSW004P	OW27–0091	88–06–23	C188	–	<2	ND	0.76	ND	0.09	ND	ND
88PSW004P	OW28–0079	88–06–30	–	–	–	ND	ND	ND	ND	ND	ND
88PSW004P	OW28–0080	88–06–30	–	–	–	ND	ND	ND	ND	ND	ND
88PSW004P	OW30–0229	88–07–15	–	–	–	ND	ND	ND	ND	ND	ND
88PSW004P	–	88–07–20	<2	–	<2	–	–	–	–	–	–
88PSW004P	OW31–0243	88–07–21	–	–	–	ND	0.09	ND	ND	ND	ND
88PSW004P	OW32–0163	88–07–29	–	–	–	ND	ND	ND	ND	ND	ND
88PSW004P	OW32–0164	88–07–29	–	–	–	ND	ND	ND	ND	ND	ND
88PSW004P	OW36–0114	88–08–26	–	–	–	ND	ND	ND	ND	ND	ND
88PSW004P	OW37–0165	88–09–05	–	–	–	ND	0.70	ND	0.76	ND	ND
88PSW004P	OW46–0008	88–11–01	–	–	–	ND	.42	ND	ND	ND	ND
89PSW004P	OW17–0034	89–04–20	–	–	–	ND	0.26	ND	ND	ND	ND
89PSW004P	–	89–05–07	–	–	–	1.44	3.01	ND	ND	ND	ND
89PSW004P	–	89–05–17	–	–	–	ND	ND	ND	ND	ND	ND
89PSW004P	–	89–05–24	–	–	–	ND	ND	ND	ND	ND	ND
89PSW004P	–	89–06–02	–	–	–	ND	0.48	ND	ND	ND	ND
89PSW004P	OW30–0019	89–07–19	–	–	–	ND	0.88	ND	ND	ND	ND
88PSW005P	OW17–0173	88–04–18	–	–	–	.180	–	ND	ND	ND	ND
88PSW005P	OW23–0050	88–05–25	<2	–	<2	ND	1.05	ND	ND	ND	ND
88PSW005P	OW23–0049	88–05–25	<2	–	<2	ND	6.9	ND	ND	ND	ND
88PSW005P	–	88–06–09	2	–	<2	–	–	–	–	–	–
88PSW005P	OW25–0108	88–06–09	–	–	–	0.10	5.57	ND	0.30	ND	ND

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88PSW005P	OW26–0179	88–06–17	–	–	–	ND	4.16	ND	0.46	ND	ND
88PSW005P	OW27–0085	88–06–23	PRESENT	–	<2	ND	4.18	ND	0.49	ND	ND
88PSW005P	OW28–0074	88–06–30	–	–	–	ND	6.62	ND	0.75	ND	ND
88PSW005P	OW30–0224	88–07–15	–	–	–	ND	5.27	ND	0.31	ND	ND
88PSW005P	OW30–0225	88–07–15	–	–	–	ND	4.78	ND	0.32	ND	ND
88PSW005P	–	88–07–20	<100	–	<2	–	–	–	–	–	–
88PSW005P	OW31–0242	88–07–21	–	–	–	0.07	5.15	ND	ND	ND	ND
88PSW005P	OW32–0165	88–07–29	–	–	–	ND	3.35	ND	ND	ND	ND
88PSW005P	OW36–0115	88–08–26	–	–	–	0.22	3.00	ND	0.37	ND	ND
88PSW005P	OW37–0152	88–09–06	–	–	–	ND	5.91	ND	6.20	ND	ND
88PSW005P	OW39–0042	88–09–16	–	–	–	ND	0.98	ND	ND	ND	ND
88PSW005P	OW46–0011	88–11–02	–	–	–	0.11	15.80	ND	ND	ND	ND
88PSW005P	OMAF	88–11–02	–	–	–	0.11	5.00	ND	ND	ND	ND
89PSW005P	OW17–0036	89–04–20	–	–	–	0.30	3.62	ND	0.75	ND	ND
89PSW005P	–	89–05–17	–	–	–	0.23	6.66	ND	ND	ND	ND
89PSW005P	–	89–06–02	–	–	–	0.23	4.12	ND	ND	ND	ND
88PSW006P	OW17–0172	88–04–18	–	–	–	0.59	–	ND	–	ND	ND
88PSW006P	OW17–0174	88–04–18	–	–	–	0.59	–	ND	–	ND	ND
88PSW006P	OW23–0048	88–05–25	C112	–	<2	ND	1.72	ND	0.41	ND	ND
88PSW006P	OW25–0101	88–06–04		–		0.24	2.18	ND	0.32	ND	ND
88PSW006P	–	88–06–09	C16	–	<2	–	–	–	–	–	–
88PSW006P	OW25–0107	88–06–09	–	–	–	0.24	2.42	ND	0.50	ND	ND
88PSW006P	OW26–0180	88–06–17	–	–	–	ND	2.22	ND	0.14	ND	ND
88PSW006P	OW27–0086	88–06–23	1800	–	<2	ND	1.90	ND	0.49	ND	ND
88PSW006P	OW28–0075	88–06–30	–	–	–	ND	2.97	ND	0.69	ND	ND
88PSW006P	OW30–0223	88–07–15	–	–	–	ND	1.51	ND	0.36	ND	ND
88PSW006P	OMAF	88–07–15	–	–	–	0.33	0.63	–	–	–	ND
88PSW006P	OW32–0166	88–07–29	–	–	–	0.22	0.89	ND	ND	ND	ND

ND = Non Detectable – = Not Analysed

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW006P	OMAF	88-07-29	-	-	-	0.80	2.00	-	-	-	ND
88PSW006P	OW36-0116	88-08-26	-	-	-	0.20	1.09	ND	0.49	ND	ND
88PSW006P	OW37-0153	88-09-06	-	-	-	0.20	2.04	ND	1.37	ND	ND
88PSW006P	OW39-0043	88-09-16	-	-	-	0.42	ND	ND	ND	ND	ND
88PSW006P	OW46-0012	88-11-02	-	-	-	0.16	2.20	ND	ND	ND	ND
88PSW006P	OMAF	88-11-02	-	-	-	0.12	0.45	ND	ND	ND	ND
89PSW006P	OW17-0035	89-04-20	-	-	-	0.30	0.65	ND	ND	ND	ND
89PSW006P	-	89-05-17	-	-	-	0.22	1.25	ND	ND	ND	ND
89PSW006P	-	89-06-02	-	-	-	0.39	1.28	ND	ND	ND	ND
88PSW007P	0W17-0165	88-04-15	-	-	-	11.38	-	ND	-	0.15	ND
88PSW007P	OW22-0172	88-05-24	4	-	<2	6.55	14.7	ND	-	ND	ND
88PSW007P	OW25-0095	88-06-04	-	-	-	4.60	8.16	ND	0.37	ND	ND
88PSW007P	OW25-0106	88-06-06	-	-	-	3.86	7.38	ND	0.44	ND	ND
88PSW007P	OW25-0267	88-06-15	-	-	-	5.15	10.10	ND	0.95	ND	ND
88PSW007P	OW27-0092	88-06-23	<2	-	<2	-	-	-	-	-	-
88PSW007P	OW27-0226	88-06-28	-	-	-	29.15	42.75	ND	ND	ND	ND
88PSW007P	OW29-0018	88-07-07	<4	-	<4	4.79	7.76	ND	ND	ND	ND
88PSW007P	OW29-0230	88-07-12	-	-	-	5.66	8.52	ND	ND	ND	ND
88PSW007P	OW29-0229	88-07-12	-	-	-	3.75	7.86	ND	ND	ND	ND
88PSW007P	OW30-0312	88-07-19	<2	-	<2	3.27	6.86	ND	ND	ND	ND
88PSW007P	OW30-0313	88-07-19	<2	-	<2	2.86	5.12	0.23	ND	ND	ND
88PSW007P	OW31-0228	88-07-25	-	-	-	4.00	6.86	ND	ND	ND	ND
88PSW007P	OW32-0171	88-08-02	-	-	-	3.96	6.47	ND	ND	ND	ND
88PSW007P	OMAF	88-08-10	-	-	-	4.00	4.30	ND	ND	ND	ND
88PSW007P	OW35-0013	88-08-17	-	-	-	4.24	5.60	ND	0.68	ND	ND
88PSW007P	OW35-0015	88-08-17	-	-	-	3.85	5.70	ND	0.72	ND	ND
88PSW007P	OW36-0107	88-08-24	-	-	-	15.15	26.00	ND	0.55	ND	ND
88PSW007P	OW36-0108	88-08-24	-	-	-	15.10	26.50	ND	0.88	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW007P	OW36–0240	88–08–29	–	–	–	4.01	4.62	ND	1.01	ND	ND
88PSW007P	OW38–0178	88–09–12	–	–	–	2.54	2.54	ND	ND	ND	ND
88PSW007P	OW44–0103	88–10–25	–	–	–	0.70	6.84	ND	ND	ND	ND
88PSW007P	OMAF	88–10–27	–	–	–	1.10	3.30	ND	ND	ND	ND
89PSW007P	OW17–0037	89–04–20	–	–	–	4.90	3.14	ND	ND	ND	ND
89PSW007P	OW17–0038	89–04–20	–	–	–	4.86	3.14	ND	ND	ND	ND
89PSW007P	–	89–05–11	–	–	–	4.29	3.58	ND	ND	ND	ND
89PSW007P	–	89–05–15	–	–	–	7.17	6.34	ND	ND	ND	ND
89PSW007P	–	89–06–01	–	–	<2	2.52	2.58	ND	ND	ND	ND
89PSW007P	–	89–06–05	–	–	–	3.35	2.90	ND	ND	ND	ND
89PSW007P	–	89–06–12	–	–	–	3.10	5.31	ND	ND	ND	ND
89PSW007P	–	89–06–20	–	–	–	0.20	0.84	ND	ND	ND	ND
89PSW007P	OW27–0069	89–06–26	–	–	<2	4.92	6.42	ND	ND	ND	ND
89PSW007P	OW29–0052	89–07–05	–	–	–	2.57	1.83	ND	ND	ND	ND
89PSW007P	OW30–0021	89–07–11	–	–	<2	5.24	5.03	ND	0.35	0.11	ND
89PSW007P	OW30–0041	89–07–17	–	–	–	3.35	11.77	ND	1.12	ND	ND
89PSW007P	–	89–07–25	–	–	<2	2.34	1.36	ND	ND	ND	ND
89PSW007P	OW32–0037	89–07–31	–	–	–	1.98	1.97	ND	ND	ND	ND
89PSW007P	OW34–0051	89–08–14	–	–	<2	3.82	2.89	ND	ND	ND	ND
89PSW007P	OW38–0021	89–08–21	–	–	–	4.33	3.74	ND	ND	ND	ND
89PSW007P	OW43–0031	89–10–18	–	–	–	2.00	1.46	ND	ND	ND	ND
88PSW008P	0W17–0163	88–04–15	–	–	–	ND	–	ND	–	ND	ND
88PSW008P	–	88–06–02	80	–	<4	–	–	–	–	–	–
88PSW008P	OW25–0096	88–06–04	–	–	–	ND	1.36	ND	–	ND	ND
88PSW008P	OW25–0105	88–06–06	–	–	–	ND	0.86	ND	–	ND	ND
88PSW008P	OW25–0266	88–06–15	–	–	–	ND	–	ND	–	ND	ND
88PSW008P	OW26–0329	88–06–20	<2	–	<2	ND	0.45	ND	–	ND	ND
88PSW008P	OW27–0225	88–06–28	–	–	–	ND	0.40	ND	–	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW008P	OW29–0017	88–07–07	<2	–	<2	ND	0.88	ND	ND	ND	ND
88PSW008P	OW29–0228	88–07–12	–	–	–	ND	0.51	ND	ND	ND	ND
88PSW008P	OW30–0311	88–07–19	<2	–	<2	ND	ND	ND	ND	ND	ND
88PSW008P	OW31–0227	88–07–25	–	–	–	ND	0.42	ND	ND	ND	ND
88PSW008P	OW32–0170	88–08–02	–	–	–	ND	ND	ND	ND	ND	ND
88PSW008P	OW35–0021	88–08–16	–	–	–	ND	ND	ND	ND	ND	ND
88PSW008P	OW36–0106	88–08–24	–	–	–	ND	ND	ND	ND	ND	ND
88PSW008P	OW36–0239	88–08–29	–	–	–	ND	ND	ND	ND	ND	ND
88PSW008P	OW38–0177	88–09–12	–	–	–	ND	ND	ND	ND	ND	ND
88PSW008P	OW44–0104	88–10–24	–	–	–	ND	ND	ND	ND	ND	ND
88PSW008P	OMAF	88–10–27	–	–	–	ND	0.50	ND	ND	ND	ND
89PSW008P	OMAF	89–01–11	–	–	–	ND	ND	–	–	–	ND
89PSW008P	OW17–0039	89–04–20	–	–	–	ND	0.46	ND	ND	ND	ND
89PSW008P	–	89–05–11	–	–	–	ND	0.88	ND	ND	ND	ND
89PSW008P	–	89–05–15	–	–	–	ND	1.10	ND	ND	ND	ND
89PSW008P	–	89–05–23	–	–	–	ND	0.76	ND	ND	ND	ND
89PSW008P	–	89–06–01	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW008P	–	89–06–05	–	–	–	ND	0.51	ND	ND	ND	ND
89PSW008P	–	89–06–12	–	–	–	0.67	0.72	ND	ND	ND	ND
89PSW008P	–	89–06–20	–	–	–	ND	1.03	ND	ND	ND	ND
89PSW008P	OW27–0070	89–06–26	–	–	<2	ND	1.08	ND	ND	ND	ND
89PSW008P	OW29–0051	89–07–05	–	–	–	ND	0.39	ND	ND	ND	ND
89PSW008P	OW30–002	89–07–11	–	–	<2	ND	1.45	ND	ND	ND	ND
89PSW008P	OW30–0040	89–07–17	–	–	–	ND	2.22	ND	ND	ND	ND
89PSW008P	–	89–07–25	–	–	<2	2.34	5.49	ND	ND	ND	ND
89PSW008P	OW32–0035	89–07–31	–	–	–	ND	ND	ND	ND	ND	ND
89PSW008P	OW32–0036	89–07–31	–	–	–	ND	0.23	ND	ND	ND	ND
89PSW008P	OW34–0052	89–08–14	–	–	<2	ND	0.49	ND	ND	ND	ND
89PSW008P	OW38–0023	89–08–21	–	–	–	0.25	4.22	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
89PSW008P	OW43–0033	89–10–18	–	–	–	ND	0.83	ND	ND	ND	ND
88PSW009P	OW17–0164	88–04–15	–	–	–	ND	–	ND	–	ND	ND
88PSW009P	OW22–0171	88–05–24	<4	–	<4	0.12	25.4	0.12	–	ND	ND
88PSW009P	–	88–06–03	<2	–	<2	–	–	–	–	–	–
88PSW009P	OW25–0092	88–06–03	–	–	–	0.14	19.0	ND	–	ND	ND
88PSW009P	OW25–0104	88–06–06	–	–	–	0.08	15.2	0.07	–	–	–
88PSW009P	OW25–0265	88–06–15	–	–	–	0.09	18.0	0.06	3.30	ND	ND
88PSW009P	OW26–0328	88–06–20	<10	–	<10	ND	15.84	ND	0.11	ND	ND
88PSW009P	OW27–0224	88–06–28	–	–	–	ND	43.2	ND	–	ND	ND
88PSW009P	OW29–0016	88–07–07	<4	–	<4	ND	17.63	ND	ND	ND	ND
88PSW009P	OW29–0227	88–07–12	–	–	–	ND	10.18	ND	ND	ND	ND
88PSW009P	0W30–0310	88–07–19	<2	–	<2	ND	8.20	ND	ND	ND	ND
88PSW009P	0W31–0226	88–07–25	–	–	–	0.80	18.70	ND	ND	ND	ND
88PSW009P	0W32–0169	88–08–02	–	–	–	ND	9.10	ND	ND	ND	ND
88PSW009P	0W35–0019	88–08–16	–	–	–	ND	7.37	ND	ND	ND	ND
88PSW009P	0W35–0020	88–08–16	–	–	–	ND	8.90	ND	ND	ND	ND
88PSW009P	0W36–0105	88–08–24	–	–	–	ND	22.00	ND	0.54	ND	ND
88PSW009P	0W36–0238	88–08–29	–	–	–	0.14	38.44	ND	0.85	ND	ND
88PSW009P	0W38–0175	88–09–12	–	–	–	ND	5.70	ND	5.70	ND	ND
88PSW009P	0W44–0105	88–10–25	–	–	–	ND	14.16	ND	ND	ND	ND
88PSW009P	OMAF	88–10–27	–	–	–	0.30	17.00	ND	ND	ND	ND
88PSW009P	OMAF	89–01–11	–	–	–	ND	5.60	–	–	–	ND
89PSW009P	OW17–0040	89–04–20	–	–	–	ND	5.34	ND	ND	ND	ND
89PSW009P	–	89–05–11	–	–	–	ND	12.01	ND	ND	ND	ND
89PSW009P	–	89–05–15	–	–	–	0.13	12.97	ND	ND	ND	ND
89PSW009P	–	89–05–23	–	–	–	ND	3.35	ND	ND	ND	ND
89PSW009P	–	89–06–01	–	–	<2	ND	6.25	ND	ND	ND	ND
89PSW009P	–	89–06–05	–	–	–	0.12	8.31	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
89PSW009P	–	89-06-12	–	–	–	ND	11.61	ND	ND	ND	ND
89PSW009P	–	89-06-20	–	–	–	0.20	12.53	ND	ND	ND	ND
89PSW009P	OW27-0071	89-06-26	–	–	<2	0.20	17.93	ND	ND	ND	ND
89PSW009P	OW29-0050	89-07-05	–	–	–	0.06	6.95	ND	0.75	ND	ND
89PSW009P	OW30-0023	89-07-11	–	–	<2	0.11	10.26	ND	1.04	ND	ND
89PSW009P	OW30-0039	89-07-17	–	–	–	ND	18.78	ND	1.85	ND	ND
89PSW009P	–	89-07-25	–	–	<2	ND	21.75	ND	ND	ND	ND
89PSW009P	OW32-0034	89-07-31	–	–	–	ND	3.25	ND	ND	ND	ND
89PSW009P	OW34-0053	89-08-14	–	–	<2	0.09	4.42	ND	ND	ND	ND
89PSW009P	OW38-0022	89-08-21	–	–	–	1.22	5.56	ND	ND	ND	ND
89PSW009P	OW43-0034	89-10-18	–	–	–	0.16	7.63	ND	0.26	ND	ND
88PSW0010P	OW17-0166	88-04-15	–	–	–	0.09	–	ND	–	ND	ND
88PSW0010P	OW22-0170	88-05-23	<2	–	<2	ND	6.80	0.12	–	ND	ND
88PSW0010P	–	88-06-02	100	–	<2	–	–	–	–	–	–
88PSW0010P	OW25-0091	88-06-03	–	–	–	ND	5.60	0.23	2.30	ND	ND
88PSW0010P	OW25-0103	88-06-06	–	–	–	0.08	4.95	ND	–	ND	ND
88PSW0010P	OW25-0264	88-06-15	–	–	–	ND	6.12	ND	–	ND	ND
88PSW0010P	0W26-0327	88-06-20	<2	–	<2	ND	5.53	ND	–	ND	ND
88PSW0010P	OW27-0223	88-06-28	–	–	–	ND	2.65	ND	–	ND	ND
88PSW0010P	OW29-0015	88-07-07	G300	–	<2	ND	5.97	ND	ND	ND	ND
88PSW0010P	OW29-0226	88-07-12	–	–	–	ND	6.13	ND	ND	ND	ND
88PSW0010P	OW30-0247	88-07-18	4	–	<2	ND	ND	ND	ND	ND	ND
88PSW0010P	OW31-0225	88-07-25	–	–	–	ND	3.59	ND	ND	ND	ND
88PSW0010P	OW32-0168	88-08-02	–	–	–	ND	3.73	ND	ND	ND	ND
88PSW0010P	OW35-0018	88-08-16	–	–	–	ND	3.32	ND	ND	ND	ND
88PSW0010P	OW36-0104	88-08-24	–	–	–	ND	22.00	ND	ND	ND	ND
88PSW0010P	OW36-0237	88-08-29	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0010P	OW38-0173	88-09-12	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D–ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D–ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW0010P	OW38–0174	88–09–12	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0010P	OW44–0106	88–10–25	–	–	–	ND	10.60	ND	ND	ND	ND
88PSW0010P	OMAF	88–10–27	–	–	–	ND	7.30	ND	ND	ND	ND
89PSW0010P	OW17–0041	89–04–20	–	–	–	ND	4.18	ND	ND	ND	ND
89PSW0010P	–	89–05–11	–	–	–	ND	6.47	ND	ND	ND	ND
89PSW0010P	–	89–05–15	–	–	–	ND	7.34	ND	ND	ND	ND
89PSW0010P	–	89–05–23	–	–	–	ND	5.13	ND	ND	ND	ND
89PSW0010P	–	89–06–01	–	–	<2	ND	3.39	ND	ND	ND	ND
89PSW0010P	–	89–06–01	–	–	<2	ND	3.45	ND	ND	ND	ND
89PSW0010P	–	89–06–05	–	–	–	ND	24.27	ND	ND	ND	ND
89PSW0010P	–	89–06–12	–	–	–	ND	2.85	ND	ND	ND	ND
89PSW0010P	–	89–06–20	–	–	–	0.10	9.26	ND	ND	ND	ND
89PSW0010P	OW27–0072	89–06–26	–	–	<2	0.10	17.63	ND	ND	ND	ND
89PSW0010P	OW27–0073	89–06–26	–	–	–	0.05	17.39	ND	ND	ND	ND
89PSW0010P	OW29–0049	89–07–05	–	–	–	ND	6.57	ND	ND	ND	ND
89PSW0010P	OW30–0024	89–07–11	–	–	<2	0.27	9.44	ND	ND	ND	ND
89PSW0010P	OW30–0038	89–07–17	–	–	–	ND	18.42	ND	0.34	ND	ND
89PSW0010P	–	89–07–25	–	–	<2	ND	9.24	ND	ND	ND	ND
89PSW0010P	OW32–0033	89–07–31	–	–	–	ND	2.92	ND	ND	ND	ND
89PSW0010P	OW340054	89–08–14	–	–	<2	ND	4.40	ND	ND	ND	ND
89PSW0010P	OW38–0027	89–08–21	–	–	–	ND	6.00	ND	ND	ND	ND
89PSW0010P	OW43–0035	89–10–18	–	–	–	0.21	9.83	ND	0.65	ND	ND
88PSW0011P	OW17–0167	88–04–15	–	–	–	0.09	–	ND	–	ND	ND
88PSW0011P	OW22–0169	88–05–23	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0011P	–	88–06–02	2	–	<2	–	–	–	–	–	–
88PSW0011P	OW25–0090	88–06–03	–	–	–	ND	6.66	ND	–	ND	ND
88PSW0011P	OW25–0102	88–06–06	–	–	–	ND	5.95	ND	–	ND	ND
88PSW0011P	OW25–0263	88–06–15	–	–	–	ND	7.43	ND	–	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW0011P	OW26–0326	88–06–20	<2	–	<2	ND	6.66	ND	–	ND	ND
88PSW0011P	OW29–0014	88–07–07	<2	–	<2	ND	6.67	ND	ND	ND	ND
88PSW0011P	OW29–0013	88–07–07	<2	–	<2	ND	5.58	ND	ND	ND	ND
88PSW0011P	OW29–0225	88–07–12	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0011P	OW30–0246	88–07–18	C24	–	<2	ND	4.38	ND	ND	ND	ND
88PSW0011P	OW31–0224	88–07–25	–	–	–	ND	5.45	ND	ND	ND	ND
88PSW0011P	OW32–0167	88–08–02	–	–	–	ND	4.53	ND	ND	ND	ND
88PSW0011P	OW35–0017	88–08–16	–	–	–	ND	5.37	ND	ND	ND	ND
88PSW0011P	OW36–0103	88–08–24	–	–	–	ND	24.35	ND	0.30	ND	ND
88PSW0011P	OW36–0236	88–08–29	–	–	–	ND	3.50	ND	0.28	ND	ND
88PSW0011P	OW38–0175	88–09–12	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0011P	OW44–0107	88–10–25	–	–	–	ND	12.20	ND	ND	ND	ND
88PSW0011P	OMAF	88–10–27	–	–	–	ND	9.20	ND	ND	ND	ND
89PSW0011P	OW17–0042	89–04–20	–	–	–	ND	4.42	ND	ND	ND	ND
89PSW0011P	–	89–05–11	–	–	–	ND	6.78	ND	ND	ND	ND
89PSW0011P	–	89–05–11	–	–	–	ND	4.98	ND	ND	ND	ND
89PSW0011P	–	89–05–23	–	–	–	ND	2.83	ND	ND	ND	ND
89PSW0011P	–	89–06–01	–	–	<2	ND	2.67	ND	ND	ND	ND
89PSW0011P	–	89–06–05	–	–	–	ND	3.55	ND	ND	ND	ND
89PSW0011P	–	89–06–12	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0011P	–	89–06–20	–	–	–	ND	4.56	ND	ND	ND	ND
89PSW0011P	OW27–0076	89–06–26	–	–	<2	0.10	ND	ND	ND	ND	ND
89PSW0011P	OW29–0048	89–07–05	–	–	–	ND	4.38	ND	ND	ND	ND
89PSW0011P	OW30–0025	89–07–11	–	–	<2	ND	1.22	ND	ND	ND	ND
89PSW0011P	OW30–0036	89–07–17	–	–	–	ND	9.27	ND	ND	ND	ND
89PSW0011P	OW30–0037	89–07–17	–	–	–	ND	10.30	ND	ND	ND	ND
89PSW0011P	–	89–07–25	–	–	<2	ND	5.35	ND	ND	ND	ND
89PSW0011P	OW32–0032	89–07–31	–	–	–	ND	1.34	ND	ND	ND	ND
89PSW0011P	OW34–0055	89–08–14	–	–	<2	ND	2.26	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
89PSW0011P	OW38–0025	89–08–21	–	–	–	ND	3.99	ND	ND	ND	ND
89PSW0011P	OW43–0036	89–10–18	–	–	–	ND	9.26	ND	ND	ND	ND
88PSW0012P	OW17–0175	88–04–19	–	–	–	ND	–	ND	–	ND	ND
88PSW0012P	OW25–0100	88–06–04	–	–	–	ND	–	ND	–	ND	ND
88PSW0012P	OW25–0012	88–06–07	–	–	–	ND	–	ND	–	ND	ND
88PSW0012P	OW25–0171	88–06–16	–	–	–	ND	–	ND	–	ND	ND
88PSW0012P	OW26–0332	88–06–21	2	–	<2	ND	–	ND	–	ND	ND
88PSW0012P	OW26–0333	88–06–21	24	–	<4	ND	–	ND	–	ND	ND
88PSW0012P	OW28–0030	88–06–29	–	–	–	ND	–	ND	–	ND	ND
88PSW0012P	OW28–0459	88–07–05	<2	–	<2	ND	ND	ND	ND	ND	ND
88PSW0012P	OW30–0304	88–07–20	C22	–	<2	ND	ND	ND	ND	ND	ND
88PSW0012P	OW31–0536	88–07–27	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0012P	OW31–0537	88–07–27	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0012P	OW33–0240	88–08–03	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0012P	OW33–0241	88–08–03	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0012P	OW34–0091	88–08–11	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0012P	OW35–0011	88–08–17	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0012P	OW36–0117	88–08–26	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0012P	OW37–0007	88–09–01	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0012P	OW38–0179	88–09–12	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0012P	OW46–0005	88–11–01	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0012P	OMAF	88–10–31	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0012P	OW18–0051	89–04–21	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0012P	–	89–06–08	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0012P	–	89–06–14	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0012P	–	89–06–21	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0012P	–	89–06–21	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0012P	OW27–0054	89–06–27	–	–	–	0.20	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D–ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D–ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW0013P	OW22–0174	88–05–24	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0013P	OW25–0098	88–06–04	–	–	–	ND	–	ND	–	ND	ND
88PSW0013P	OW25–0099	88–06–04	–	–	–	ND	1.08	ND	–	ND	ND
88PSW0013P	OW25–0011	88–06–07	–	–	–	ND	–	ND	–	ND	ND
88PSW0013P	OW25–0170	88–06–16	–	–	–	ND	–	ND	–	ND	ND
88PSW0013P	OW26–0331	88–06–21	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0013P	OW28–OO29	88–06–29	–	–	–	ND	–	ND	–	ND	ND
88PSW0013P	OW28–0458	88–07–05	<2	–	<2	ND	ND	ND	ND	ND	ND
88PSW0013P	OW30–0245	88–07–14	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0013P	OW30–0305	88–07–20	<2	–	26	ND	ND	ND	ND	ND	ND
88PSW0013P	OW31–0538	88–07–27	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0013P	OW33–0242	88–08–03	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0013P	OW34–0095	88–08–11	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0013P	OW35–0010	88–08–17	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0013P	OW36–0119	88–08–26	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0013P	DW36–0120	88–08–26	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0013P	OW37–0008	88–09–01	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0013P	OW37–0009	88–09–01	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0013P	OW38–0180	88–09–12	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0013P	OW46–0003	88–10–31	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0013P	OMAF	88–10–31	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0013P	OW18–0049	89–04–21	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0013P	–	89–05–15	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0013P	–	89–05–15	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0013P	–	89–06–08	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0013P	–	89–06–14	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0013P	–	89–06–14	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0013P	–	89–06–21	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D–ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D–ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
89PSW0013P	OW27–0055	89–06–27	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0013P	OW27–0056	89–06–27	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0013P	OW29–0053	89–07–06	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0013P	OW30–0043	89–07–12	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0013P	OW30–0044	89–07–12	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0013P	OW30–0029	89–07–18	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0013P	–	89–07–26	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0013P	–	89–07–26	–	–	<2	ND	ND	ND	ND	ND	ND
88PSW0014P	OW17–0177	88–04–19	–	–	–	ND	–	ND	–	ND	ND
88PSW0014P	OW22–0173	88–05–24	2	–	<2	ND	–	ND	–	ND	ND
88PSW0014P	OW25–0097	88–06–04	–	–	–	ND	–	ND	–	ND	ND
88PSW0014P	OW25–0010	88–06–07	–	–	–	ND	–	ND	–	ND	ND
88PSW0014P	OW25–0169	88–06–16	–	–	–	ND	–	ND	–	ND	ND
88PSW0014P	OW26–0330	88–06–21	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0014P	OW28–0028	88–06–29	–	–	–	ND	–	ND	–	ND	ND
88PSW0014P	OW28–0457	88–07–05	8	–	<2	ND	ND	ND	ND	ND	ND
88PSW0014P	OW30–0244	88–07–14	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0014P	OW30–0306	88–07–20	6	–	<2	ND	ND	ND	ND	ND	ND
88PSW0014P	OW31–0539	88–07–27	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0014P	OW33–0243	88–08–03	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0014P	OW34–0094	88–08–11	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0014P	OW35–0009	88–08–17	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0014P	OW36–0118	88–08–26	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0014P	OW37–0010	88–09–01	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0014P	OW46–0004	88–10–31	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0014P	OMAF	88–10–31	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0014P	OMAF	89–01–11	–	–	–	ND	ND	–	–	–	ND
89PSW0014P	OW18–0050	89–04–21	–	–	–	0.30	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
89PSW0014P	–	89–05–15	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0014P	–	89–06–08	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0014P	–	89–06–08	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0014P	–	89–06–14	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0014P	–	89–06–21	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0014P	OW27–0057	89–06–27	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0014P	OW29–0054	89–07–06	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0014P	OW30–0045	89–07–12	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0014P	OW30–0030	89–07–18	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0014P	OW30–0031	89–07–18	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0014P	–	89–07–26	–	–	<2	ND	ND	ND	ND	ND	ND
88PSW0015P	OW17–0178	88–04–19	–	–	–	ND	–	ND	–	ND	ND
88PSW0015P	OW22–0167	88–05–23	C6	–	<2	ND	–	ND	–	ND	ND
88PSW0015P	OW25–0094	88–06–03	–	–	–	ND	–	ND	–	ND	ND
88PSW0015P	OW25–0007	88–06–07	–	–	–	ND	–	ND	–	ND	ND
88PSW0015P	OW25–0168	88–06–16	–	–	–	ND	–	ND	–	ND	ND
88PSW0015P	OW26–0334	88–06–21	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0015P	OW28–0025	88–06–29	–	–	–	ND	–	ND	–	ND	ND
88PSW0015P	OW28–0455	88–07–05	C2	–	<2	ND	ND	ND	ND	ND	ND
88PSW0015P	OW30–0241	88–07–14	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0015P	OW30–0307	88–07–20	<2	–	<2	ND	ND	ND	ND	ND	ND
88PSW0015P	OW31–0540	88–07–27	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0015P	OW31–0238	88–08–03	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0015P	OW34–0093	88–08–11	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0015P	OW35–0007	88–08–17	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0015P	OW36–0109	88–08–24	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0015P	OW36–0234	88–08–30	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0015P	OW39–0001	88–09–14	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW0015P	OW46–0001	88–10–31	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0015P	OMAF	88–10–31	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	OW18–0053	89–04–24	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	–	89–05–11	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	–	89–05–15	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	–	89–05–24	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	–	89–06–01	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0015P	–	89–06–06	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	–	89–06–06	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	–	89–06–14	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	–	89–06–19	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	–	89–06–27	–	–	<2	0.10	ND	ND	ND	ND	ND
89PSW0015P	OW29–0055	89–07–06	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	OW30–0046	89–07–12	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	OW30–0027	89–07–18	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	–	89–07–26	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0015P	OW34–0044	89–08–01	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0016P	0W17–0179	88–04–19	–	–	–	ND	–	ND	–	ND	ND
88PSW0016P	OW22–0168	88–05–23	C56	–	<2	ND	–	ND	–	ND	ND
88PSW0016P	OW25–0093	88–06–03	–	–	–	ND	–	ND	–	ND	ND
88PSW0016P	OW25–0008	88–06–07	–	–	–	ND	–	ND	–	ND	ND
88PSW0016P	OW25–0009	88–06–07	–	–	–	ND	–	ND	–	ND	ND
88PSW0016P	OW25–0166	88–06–16	–	–	–	ND	–	ND	–	ND	ND
88PSW0016P	OW25–0167	88–06–16	–	–	–	ND	–	ND	–	ND	ND
88PSW0016P	OW26–0335	88–06–21	<4	–	<4	ND	–	ND	–	ND	ND
88PSW0016P	OW28–0026	88–06–29	–	–	–	ND	–	ND	–	ND	ND
88PSW0016P	OW28–0027	88–06–29	–	–	–	ND	–	ND	–	ND	ND
88PSW0016P	OW28–0456	88–07–05	<4	–	<4	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW0016P	OW30-0242	88-07-14	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0016P	OW30-0308	88-07-20	<2	–	<2	ND	ND	ND	ND	ND	ND
88PSW0016P	OW31-0541	88-07-27	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0016P	OW31-0542	88-07-27	–	–	–	0.28	ND	ND	ND	ND	ND
88PSW0016P	OW33-0239	88-08-03	–	–	–	0.07	ND	ND	ND	ND	ND
88PSW0016P	OW34-0092	88-08-11	–	–	–	0.10	ND	ND	ND	ND	ND
88PSW0016P	OW35-0008	88-08-17	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0016P	OW36-0110	88-08-24	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0016P	OW36-0235	88-08-30	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0016P	OW46-0002	88-10-31	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0016P	OMAF	88-10-31	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0016P	OW18-0054	89-04-21	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0016P	–	89-05-12	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0016P	–	89-05-15	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0016P	–	89-05-24	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0016P	–	89-06-01	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0016P	–	89-06-06	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0016P	–	89-06-14	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0016P	–	89-06-19	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0016P	OW27-0079	89-06-26	–	–	–	0.10	ND	ND	ND	ND	ND
89PSW0016P	OW29-0057	89-07-06	–	–	–	0.12	ND	ND	ND	ND	ND
89PSW0016P	OW30-0047	89-07-12	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0016P	OW30-0028	89-07-18	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0016P	–	89-07-26	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0017P	OW17-0181	88-04-20	–	–	–	0.15	–	ND	–	ND	ND
89PSW0017P	OW18-0058	89-04-25	–	–	–	ND	0.36	ND	ND	ND	ND
89PSW0017P	–	89-05-12	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0017P	–	89-06-06	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW0018P	OW17–0182	88–04–20	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0018P	OW18–0059	89–04–25	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0019P	0W17–0183	88–04–20	–	–	–	1.22	–	ND	–	ND	ND
89PSW0019P	OW18–0055	89–04–24	–	–	–	0.50	1.26	ND	ND	ND	ND
89PSW0019P	–	89–05–12	–	–	–	0.25	1.50	ND	ND	ND	ND
88PSW0020P	0W17–0184	88–04–20	–	–	–	2.03	–	ND	–	ND	ND
89PSW0020P	OW18–0056	89–04–24	–	–	–	0.64	0.52	ND	ND	ND	ND
89PSW0020P	–	89–05–12	–	–	–	0.58	ND	ND	ND	ND	ND
88PSW0021P	OW17–0029	88–04–12	–	–	–	ND	–	ND	–	ND	ND
88PSW0021P	OW23–0093	88–05–28	–	–	–	ND	–	ND	–	ND	ND
88PSW0021P	OW25–0081	88–06–02	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0021P	–	88–06–08	C98	–	<2	–	–	–	–	–	–
88PSW0021P	OW24–0278	88–06–08	–	–	–	ND	–	ND	–	ND	ND
88PSW0021P	OW25–0251	88–06–14	–	–	–	ND	–	ND	–	ND	ND
88PSW0021P	OW26–0315	88–06–22	<4	–	<4	ND	–	ND	–	ND	ND
88PSW0021P	OW28–0082	88–07–01	–	–	–	ND	–	ND	–	ND	ND
88PSW0021P	OW29–0002	88–07–06	<4	–	–	ND	ND	ND	ND	ND	ND
88PSW0021P	OW30–0231	88–07–13	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0021P	OW31–0230	88–07–23	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0021P	OW34–0080	88–08–09	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0021P	OW36–0095	88–08–25	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0021P	OW37–0162	88–09–07	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0021P	OW46–0013	88–11–03	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0021P	OMAF	88–11–03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0021P	OW18–0062	89–04–26	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D–ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D–ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW0029P	OW31–0237	88–07–23	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0029P	OW31–0238	88–07–23	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0029P	OW32–0181	88–07–28	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0029P	OW34–0085	88–08–09	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0029P	OW35–0029	88–08–18	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0029P	OW35–0030	88–08–18	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0029P	OW36–0101	88–08–25	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0029P	OW36–0102	88–08–25	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0029P	OW37–0156	88–09–06	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0029P	OW39–0007	88–09–15	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0029P	OW46–0022	88–11–04	–	–	–	0.24	ND	ND	ND	ND	ND
88PSW0029P	OMAF	88–11–04	–	–	–	0.08	ND	ND	ND	ND	ND
89PSW0029P	OW19–0004	89–04–28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0029P	–	89–05–16	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0029P	–	89–05–30	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0029P	–	89–06–13	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0029P	OW27–0067	89–06–23	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0029P	OW28–0022	89–07–03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0029P	OW28–0023	89–07–03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0029P	OW32–0021	89–07–28	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0030P	OW44–0110	88–10–26	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0030P	OMAF	88–10–27	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0030P	–	89–05–26	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0030P	–	89–06–19	–	–	–	0.10	ND	ND	ND	ND	ND
89PSW0030P	–	89–06–19	–	–	–	0.20	ND	ND	ND	ND	ND
89PSW0030P	–	89–06–28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0030P	OW30–0050	89–07–13	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0030P	OW30–0033	89–07–18	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW0031P	OW44–0111	88–10–26	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0031P	OMAF	88–10–27	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0031P	–	89–05–12	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0031P	–	89–06–19	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0031P	OW30–0049	89–07–13	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0031P	OW30–0032	89–07–18	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0032P	OW44–0109	88–10–26	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0032P	OMAF	88–10–27	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0032P	–	89–05–24	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0032P	–	89–06–19	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0032P	OW28–0007	89–06–28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0032P	OW30–0051	89–07–13	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D–ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D–ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
89PSW0021P	–	89–05–16	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0021P	–	89–05–25	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0021P	–	89–05–25	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0021P	–	89–05–30	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0021P	–	89–06–13	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0021P	OW27–0058	89–06–23	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0021P	OW28–0014	89–07–03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0021P	OW32–0011	89–07–28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0021P	OW34–0045	89–08–02	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0022P	OW17–0030	88–04–12	–	–	–	ND	–	ND	–	ND	ND
88PSW0022P	OW23–0092	88–05–28	–	–	–	ND	–	ND	–	ND	ND
88PSW0022P	OW25–0080	88–06–02	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0022P	OW24–0277	88–06–08	–	–	–	ND	–	ND	–	ND	ND
88PSW0022P	–	88–06–08	<2	–	<2	–	–	–	–	–	–
88PSW0022P	OW25–0252	88–06–14	–	–	–	ND	–	ND	–	ND	ND
88PSW0022P	OW26–0314	88–06–22	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0022P	OW28–0081	88–07–01	–	–	–	ND	–	ND	–	ND	ND
88PSW0022P	OW29–0001	88–07–06	<2	–	–	ND	ND	ND	ND	ND	ND
88PSW0022P	OW30–0230	88–07–13	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0022P	OW31–0229	88–07–23	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0022P	OW34–0079	88–08–09	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0022P	OW35–0022	88–08–18	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0022P	OW36–0094	88–08–25	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0022P	OW37–0163	88–09–07	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0022P	OW46–0014	88–11–03	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0022P	OMAF	88–11–03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0022P	OW18–0063	89–04–26	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0022P	–	89–05–16	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D–ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D–ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
89PSW0022P	–	89–05–25	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0022P	–	89–05–30	–	–	<4	ND	ND	ND	ND	ND	ND
89PSW0022P	–	89–06–13	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0022P	OW27–0059	89–06–23	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0022P	OW28–0016	89–07–03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0022P	OW32–0012	89–07–28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0022P	OW34–0046	89–08–02	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0023P	OW17–0031	88–04–12	–	–	–	ND	–	ND	–	ND	ND
88PSW0023P	OW23–0094	88–05–28	–	–	–	ND	–	ND	–	ND	ND
88PSW0023P	OW25–0082	88–06–02	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0023P	–	88–06–08	8	–	<4	–	–	–	–	–	–
88PSW0023P	OW24–0279	88–06–08	–	–	–	ND	–	ND	–	ND	ND
88PSW0023P	OW25–0253	88–06–14	–	–	–	ND	–	ND	–	ND	ND
88PSW0023P	OW26–0316	88–06–22	<4	–	<4	ND	–	ND	–	ND	ND
88PSW0023P	OW29–0003	88–07–06	<4	–	–	ND	–	ND	–	ND	ND
88PSW0023P	OW28–0083	88–07–01	–	–	–	ND	–	ND	–	ND	ND
88PSW0023P	OW29–0004	88–07–06	<4	–	–	ND	ND	ND	ND	ND	ND
88PSW0023P	OW30–0232	88–07–13	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0023P	OW34–0081	88–08–09	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0023P	OW35–0023	88–08–18	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0023P	OW36–0096	88–08–25	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0023P	OW37–0161	88–09–07	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0023P	OW39–0047	88–09–16	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0023P	OW46–0015	88–11–03	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0023P	OMAF	88–11–03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0023P	OW18–0064	89–04–26	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0023P	–	89–05–16	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0023P	–	89–05–25	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
89PSW0023P	–	89–05–30	–	–	<4	ND	ND	ND	ND	ND	ND
89PSW0023P	–	89–06–13	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0023P	–	89–06–13	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0023P	OW28–0017	89–07–03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0023P	OW32–0013	89–07–28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0023P	OW34–0047	89–08–02	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OW17–0032	88–04–12	–	–	–	ND	–	ND	–	ND	ND
88PSW0024P	OW23–0097	88–05–28	–	–	–	ND	–	ND	–	ND	ND
88PSW0024P	OW23–0096	88–05–28	–	–	–	ND	–	ND	–	ND	ND
88PSW0024P	OW25–0084	88–06–02	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0024P	–	88–06–08	4	–	<4	–	–	–	–	–	–
88PSW0024P	OW24–0281	88–06–08	–	–	–	ND	–	ND	–	ND	ND
88PSW0024P	OW25–0255	88–06–14	–	–	–	ND	–	ND	–	ND	ND
88PSW0024P	OW26–0318	88–06–22	<4	–	<4	ND	–	ND	–	ND	ND
88PSW0024P	OW28–0085	88–O7–01	–	–	–	ND	–	ND	–	ND	ND
88PSW0024P	OW29–0006	88–07–06	<4	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OW30–0234	88–07–13	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OW31–0231	88–07–23	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OW31–0233	88–07–23	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OW32–0176	88–07–28	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OW34–0082	88–08–09	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OW34–0083	88–08–09	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OW35–0024	88–08–18	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OW37–0160	88–09–07	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OW39–0045	88–09–16	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OW37–0046	88–09–16	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OW46–0016	88–11–03	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0024P	OMAF	88–11–03	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D–ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D–ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
89PSW0024P	OW18–0065	89–04–26	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0024P	–	89–05–16	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0024P	–	89–05–30	–	–	<4	ND	ND	ND	ND	ND	ND
89PSW0024P	–	89–05–30	–	–	<4	ND	ND	ND	ND	ND	ND
89PSW0024P	–	89–06–13	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0024P	OW27–0061	89–06–23	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0024P	OW28–0011	89–07–03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0024P	OW32–0015	89–07–28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0024P	OW34–0049	89–08–02	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0025P	OW17–0033	88–04–12	–	–	–	ND	–	ND	–	ND	ND
88PSW0025P	OW23–0095	88–05–28	–	–	–	ND	–	ND	–	ND	ND
88PSW0025P	OW25–0083	88–06–02	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0025P	OW24–0280	88–06–08	–	–	–	ND	–	ND	–	ND	ND
88PSW0025P	–	88–06–08	C52	–	<2	–	–	–	–	–	–
88PSW0025P	OW25–0254	88–06–14	–	–	–	ND	–	ND	–	ND	ND
88PSW0025P	OW26–0317	88–06–22	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0025P	OW28–0084	88–07–01	–	–	–	ND	–	ND	–	ND	ND
88PSW0025P	OW29–0005	88–07–06	<2	–	–	ND	ND	ND	ND	ND	ND
88PSW0025P	OW30–0233	88–07–13	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0025P	OW31–0232	88–07–23	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0025P	OW34–0084	88–08–09	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0025P	OW35–0025	88–08–18	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0025P	OW36–0097	88–08–25	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0025P	OW36–0099	88–08–25	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0025P	OW37–0159	88–09–07	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0025P	OW39–0044	88–09–16	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0025P	OW46–0017	88–11–03	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0025P	OMAF	88–11–03	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
89PSW0025P	OW18–0066	89–04–26	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0025P	–	89–05–16	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0025P	–	89–05–16	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0025P	–	89–05–26	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0025P	–	89–05–30	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0025P	–	89–06–13	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0025P	OW27–0062	89–06–23	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0025P	OW27–0063	89–06–23	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0025P	OW28–0012	89–07–03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0025P	OW28–0013	89–07–03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0025P	OW32–0016	89–07–28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0025P	OW32–0017	89–07–28	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0026P	OW17–0034	88–04–13	–	–	–	ND	–	ND	–	ND	ND
88PSW0026P	OW23–0098	88–05–28	–	–	–	ND	–	ND	–	ND	ND
88PSW0026P	OW25–0085	88–06–02	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0026P	OW24–0284	88–06–08	–	–	–	ND	–	ND	–	ND	ND
88PSW0026P	–	88–06–08	<2	–	<2	–	–	–	–	–	–
88PSW0026P	OW24–0283	88–06–08	–	–	–	ND	–	ND	–	ND	ND
88PSW0026P	–	88–06–08	<2	–	<2	–	–	–	–	–	–
88PSW0026P	OW25–0257	88–06–14	–	–	–	ND	–	ND	–	ND	ND
88PSW0026P	OW26–0320	88–06–22	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0026P	OW26–0321	88–06–22	<2	–	<2	ND	–	ND	–	ND	ND
88PSW0026P	OW28–0086	88–07–01	–	–	–	ND	–	ND	–	ND	ND
88PSW0026P	OW29–0008	88–07–06	<2	–	–	ND	ND	ND	ND	ND	ND
88PSW0026P	OW30–0236	88–07–13	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0026P	OW31–0239	88–07–23	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0026P	OW32–0178	88–07–28	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0026P	OW34–0087	88–08–09	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW0026P	OW35-0026	88-08-18	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0026P	OW37-0154	88-09-06	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0026P	OW37-0155	88-09-06	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0026P	OW39-0009	88-09-15	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0026P	OW46-0018	88-11-03	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0026P	OW46-0019	88-11-04	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0026P	OMAF	88-11-04	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0026P	OMAF	88-11-04	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0026P	OW19-0001	89-04-28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0026P	–	89-05-16	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0026P	–	89-05-25	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0026P	–	89-05-30	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0026P	–	89-06-13	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0026P	OW27-0064	89-06-23	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0026P	OW28-0018	89-07-03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0026P	OW32-0018	89-07-28	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0027P	OW17-0034	88-04-13	–	–	–	0.27	–	ND	–	ND	ND
88PSW0027P	OW23-0100	88-05-28	–	–	–	ND	–	ND	–	ND	ND
88PSW0027P	OW25-0087	88-06-02	C152	–	<2	ND	–	ND	–	ND	ND
88PSW0027P	–	88-06-08	C72	–	<2	–	–	–	–	–	–
88PSW0027P	OW24-0286	88-06-08	–	–	–	ND	–	ND	–	ND	ND
88PSW0027P	OW25-0260	88-06-14	–	–	–	ND	–	ND	–	ND	ND
88PSW0027P	OW26-0323	88-06-22	6	–	<2	ND	–	ND	–	ND	ND
88PSW0027P	OMAF	88-07-01	–	–	–	ND	ND	–	–	–	ND
88PSW0027P	OW28-0088	88-07-01	–	–	–	ND	–	ND	–	ND	ND
88PSW0027P	OW29-0010	88-07-06	8	–	<2	ND	ND	ND	ND	ND	ND
88PSW0027P	OW30-0239	88-07-13	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0027P	OW30-0238	88-07-13	–	–	–	ND	ND	ND	ND	ND	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW0027P	OW31–0236	88–07–23	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0027P	OW32–0180	88–07–28	–	–	–	0.11	ND	ND	ND	ND	ND
88PSW0027P	OW34–0088	88–08–09	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0027P	OW35–0027	88–08–18	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0027P	OW35–0032	88–08–18	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0027P	OW36–0100	88–08–25	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0027P	OW37–0157	88–09–07	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0027P	OW39–0008	88–09–15	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0027P	OW46–0020	88–11–04	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0027P	OMAF	88–11–04	–	–	–	0.06	0.09	ND	ND	ND	ND
89PSW0027P	OW19–0002	89–04–28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0027P	–	89–05–16	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0027P	–	89–05–30	–	–	<2	ND	ND	ND	ND	ND	ND
89PSW0027P	–	89–06–13	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0027P	OW27–0065	89–06–23	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0027P	OW28–0019	89–07–03	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0027P	OW32–0019	89–07–28	–	–	–	ND	ND	ND	ND	ND	ND
89PSW0027P	OW46–0021	89–11–02	–	–	–	ND	ND	ND	ND	ND	ND
88PSW0028P	OW17–0036	88–04–13	–	–	–	24.64	10.45	ND	0.99	ND	ND
88PSW0028P	OW23–0099	88–05–28	–	–	–	12.50	6.80	ND	–	ND	ND
88PSW0028P	OW25–0086	88–06–02	<2	–	<2	12.80	6.60	ND	0.65	0.18	ND
88PSW0028P	OW24–0285	88–06–08	–	–	–	9.13	3.22	ND	0.20	0.22	ND
88PSW0028P	–	88–06–08	<2	–	<2	–	–	–	–	–	–
88PSW0028P	OW25–0259	88–06–14	–	–	–	12.80	5.22	ND	0.91	ND	ND
88PSW0028P	OW25–0258	88–06–14	–	–	–	12.70	5.80	ND	1.15	ND	ND
88PSW0028P	OW26–0322	88–06–22	<2	–	<2	14.68	5.84	ND	1.66	0.15	ND
88PSW0028P	OW28–0087	88–07–01	–	–	–	15.50	5.12	ND	1.40	0.08	ND
88PSW0028P	OW29–0009	88–07–06	<2	–	<2	16.40	5.57	ND	1.30	0.08	ND

BACTERIA & PESTICIDES DATA (Triazines) – SOUTHWEST REGION 1988–1989

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (Counts/100ml)	BACKGROUND (Counts/100ml)	FECAL COLIFORM (Counts/100ml)	ATRAZINE (UG/L)	D-ETHYL ATRAZINE (UG/L)	SIMAZINE (UG/L)	D-ETHYL SIMAZINE (UG/L)	PROPAZINE (UG/L)	METOLACHLOR (UG/L)
88PSW0028P	OW30–0237	88–07–13	–	–	–	10.22	4.55	ND	0.68	ND	ND
88PSW0028P	OW31–0235	88–07–23	–	–	–	14.37	4.55	ND	ND	0.90	ND
88PSW0028P	OW32–0181	88–07–28	–	–	–	12.73	3.63	ND	ND	ND	ND
88PSW0028P	OW34–0086	88–08–09	–	–	–	13.80	3.60	ND	ND	ND	ND
88PSW0028P	OW35–0031	88–08–18	–	–	–	9.05	3.17	ND	0.59	ND	ND
88PSW0028P	OW46–0021	88–11–04	–	–	–	10.90	10.00	ND	ND	ND	ND
88PSW0028P	OMAF	88–11–04	–	–	–	24.00	6.00	ND	ND	ND	ND
89PSW0028P	OW19–0003	89–04–28	–	–	–	10.82	4.02	ND	0.58	0.14	ND
89PSW0028P	–	89–05–16	–	–	–	8.84	2.54	ND	ND	ND	ND
89PSW0028P	–	89–05–30	–	–	<2	10.40	3.25	ND	ND	ND	ND
89PSW0028P	–	89–06–13	–	–	–	26.92	3.96	ND	ND	ND	ND
89PSW0028P	OW27–0066	89–06–23	–	–	–	3.03	1.46	ND	ND	ND	ND
89PSW0028P	OW28–0020	89–07–03	–	–	–	11.03	4.01	ND	ND	ND	ND
89PSW0028P	OW32–0020	89–07–28	–	–	–	4.67	4.22	ND	ND	ND	ND
89PSW0028P	OW46–0022	89–11–02	–	–	–	8.79	2.94	ND	ND	0.16	ND
88PSW0029P	OW17–0038	88–04–13	–	–	–	ND	ND	ND	–	ND	ND
88PSW0029P	OW17–0037	88–04–13	–	–	–	0.20	0.08	ND	–	0.36	ND
88PSW0029P	OW23–0101	88–05–28	–	–	–	ND	–	ND	–	ND	ND
88PSW0029P	OW25–0089	88–06–02	–	–	–	ND	–	ND	–	ND	ND
88PSW0029P	OW25–0088	88–06–02	–	–	–	ND	–	ND	–	ND	ND
88PSW0029P	OW24–0287	88–06–08	–	–	–	ND	–	ND	–	ND	ND
88PSW0029P	–	88–06–08	56	–	<2	–	–	–	–	–	–
88PSW0029P	OW25–0261	88–06–14	–	–	–	ND	–	ND	–	ND	ND
88PSW0029P	OW26–0324	88–06–22	4	–	<2	ND	–	ND	–	ND	ND
88PSW0029P	OW28–0090	88–07–01	–	–	–	ND	–	ND	–	ND	ND
88PSW0029P	OW28–0089	88–07–01	–	–	–	ND	–	ND	–	ND	ND
88PSW0029P	OW29–0011	88–07–06	<2	–	<2	ND	ND	ND	ND	ND	ND
88PSW0029P	OW30–0240	88–07–13	–	–	–	ND	ND	ND	ND	ND	ND

PESTICIDES & BACTERIA DATA – SOUTHEAST REGION 1988

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (counts/100 ml)	BACKGROUND (counts/100 ml)	FECAL COLIFORM (counts/100 ml)	ATRAZINE (ppb)	D–ETHYL ATRAZINE (ppb)	CYANIZINE (ppb)	METOLACHLOR (ppb)	ALACHLOR (ppb)
88SE001	4235	88–05–10	–	–	–	1.5	1.6	ND	ND	ND
88SE001	4531	88–05–25	–	–	–	0.96	0.90	ND	ND	ND
88SE001	5589	88–06–21	<2	6	0	1.1	1.4	ND	ND	ND
88SE001	5952	88–06–28	<2	<2	0	0.90	0.86	ND	ND	ND
88SE001	6260	88–07–04	–	–	–	0.83	0.76	ND	ND	ND
88SE001	6792	88–07–18	–	–	–	0.83	0.60	ND	ND	ND
88SE001	7238	88–08–02	–	–	–	0.63	0.66	ND	ND	ND
88SE001	7626	88–08–15	<2	34	0	0.83	0.80	ND	ND	ND
88SE001	8076	88–08–29	–	–	–	0.40	0.18	ND	ND	ND
88SE001	8432	88–09–12	<2	<2	0	0.86	0.73	ND	ND	ND
88SE002	4236	88–05–10	–	–	–	0.86	0.83	ND	ND	ND
88SE002	4532	88–05–25	–	–	–	0.63	0.60	ND	ND	ND
88SE002	5590	88–06–21	<2	<2	0	0.46	0.63	ND	ND	ND
88SE002	5953	88–06–28	–	–	–	0.23	ND	ND	ND	ND
88SE002	6261	88–07–04	2	4	0	0.70	0.83	ND	ND	ND
88SE002	6793	88–07–18	–	–	–	0.23	0.16	ND	ND	ND
88SE002	7239	88–08–02	–	–	–	0.16	0.16	ND	ND	ND
88SE002	7627	88–08–15	20	700	0	0.43	0.40	ND	ND	ND
88SE002	8077	88–08–29	–	–	–	ND	ND	ND	ND	ND
88SE002	8433	88–09–12	<2	20	0	0.16	0.13	ND	ND	ND
88SE003	4237	88–05–10	–	–	–	0.30	ND	ND	ND	ND
88SE003	5119	88–06–07	–	–	–	ND	ND	ND	ND	ND
88SE003	5591	88–06–21	280	1080	0	ND	ND	ND	ND	ND
88SE003	5954	88–06–28	–	–	–	ND	ND	ND	ND	ND
88SE003	6262	88–07–04	4	4	0	ND	ND	ND	ND	ND
88SE003	6794	88–07–18	–	–	–	ND	ND	ND	ND	ND

– NOT ANALYSED ND – NOT DETECTED

PESTICIDES & BACTERIA DATA – SOUTHEAST REGION 1988

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (counts/100 ml)	BACKGROUND (counts/100 ml)	FECAL COLIFORM (counts/100 ml)	ATRAZINE (ppb)	D-ETHYL ATRAZINE (ppb)	CYANIZINE (ppb)	METOLACHLOR (ppb)	ALACHLOR (ppb)
88SE003	7240	88-08-02	–	–	–	ND	ND	ND	ND	ND
88SE004	4559	88-05-25	–	–	–	ND	ND	ND	ND	ND
88SE004	5120	88-06-07	–	–	–	0.10	0.06	ND	ND	ND
88SE004	5592	88-06-21	<2	52	0	ND	ND	ND	ND	ND
88SE004	5965	88-06-28	–	–	–	ND	ND	ND	ND	ND
88SE004	6263	88-07-04	<2	2000	0	ND	ND	ND	ND	ND
88SE004	6795	88-07-18	–	–	–	ND	ND	ND	ND	ND
88SE004	7241	88-08-02	–	–	–	ND	ND	ND	ND	ND
88SE005	4238	88-05-10	–	–	–	ND	ND	ND	ND	ND
88SE005	4533	88-05-25	–	–	–	0.23	ND	ND	ND	ND
88SE005	5593	88-06-21	<2	<2	0	ND	ND	ND	ND	ND
88SE005	5966	88-06-28	–	–	–	ND	ND	ND	ND	ND
88SE005	6264	88-07-04	<2	<2	0	ND	ND	ND	ND	ND
88SE005	6796	88-07-18	–	–	–	ND	ND	ND	ND	ND
88SE005	7242	88-08-02	–	–	–	ND	ND	ND	ND	ND
88SE005	7613	88-08-15	<2	34	0	ND	ND	ND	ND	ND
88SE005	8078	88-08-29	–	–	–	ND	ND	ND	ND	ND
88SE006	4239	88-05-10	–	–	–	0.36	0.53	ND	ND	ND
88SE006	4534	88-05-25	–	–	–	0.26	0.50	ND	ND	ND
88SE006	5594	88-06-21	<2	<2	0	0.23	0.40	ND	ND	ND
88SE006	5967	88-06-28	–	–	–	0.20	ND	ND	ND	ND
88SE006	6265	88-07-04	<2	<2	0	0.46	0.86	ND	ND	ND
88SE006	6797	88-07-18	–	–	–	0.06	0.10	ND	ND	ND
88SE006	7243	88-08-02	–	–	–	ND	ND	ND	ND	ND
88SE006	7628	88-08-15	<2	<2	0	0.43	0.66	ND	ND	ND
88SE006	8079	88-08-29	–	–	–	0.17	0.22	ND	ND	ND

– = NOT ANALYSED   ND = NOT DETECTED

PESTICIDES & BACTERIA DATA – SOUTHEAST REGION 1988

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (counts/100 ml)	BACKGROUND (counts/100 ml)	FECAL COLIFORM (counts/100 ml)	ATRAZINE (ppb)	D-ETHYL ATRAZINE (ppb)	CYANIZINE (ppb)	METOLACHLOR (ppb)	ALACHLOR (ppb)
88SE006	8434	88-09-12	<2	<2	0	0.10	0.13	ND	ND	ND
88SE007	4240	88-05-10	–	–	–	0.30	0.26	ND	ND	ND
88SE007	5595	88-06-21	2	76	0	ND	ND	ND	ND	ND
88SE007	5958	88-06-28	–	–	–	ND	ND	ND	ND	ND
88SE007	6266	88-07-04	<2	<2	0	0.36	0.50	ND	ND	ND
88SE007	6798	88-07-18	–	–	–	ND	ND	ND	ND	ND
88SE007	7629	88-08-15	6100	4100	800	0.16	ND	ND	ND	ND
88SE007	8080	88-08-29	–	–	–	0.16	0.16	ND	ND	ND
88SE007	8435	88-09-12	12	25000	0	0.10	0.20	ND	ND	ND
88SE008	4241	88-05-10	–	–	–	0.16	0.36	ND	ND	ND
88SE008	4535	88-05-25	–	–	–	0.30	0.46	ND	ND	ND
88SE008	5596	88-06-21	<2	<2	0	0.16	ND	ND	ND	ND
88SE008	5959	88-06-28	–	–	–	ND	ND	ND	ND	ND
88SE008	6267	88-07-04	<2	<2	0	0.40	0.86	ND	ND	ND
88SE008	6268	88-07-04	<2	<2	0	0.33	0.70	ND	ND	ND
88SE008	6799	88-07-18	–	–	–	0.50	0.90	ND	ND	ND
88SE008	7244	88-08-02	–	–	–	ND	ND	ND	ND	ND
88SE008	7630	88-08-15	<2	24	0	0.10	0.16	ND	ND	ND
88SE008	8081	88-08-29	–	–	–	0.08	0.20	ND	ND	ND
88SE008	8436	88-09-12	<2	138	0	0.10	0.16	ND	ND	ND
88SE009	4242	88-05-10	–	–	–	1.2	1.6	ND	ND	ND
88SE009	4536	88-05-25	–	–	–	0.80	0.12	ND	ND	ND
88SE010	4537	88-05-25	–	–	–	0.23	0.30	ND	ND	ND
88SE010	5122	88-06-07	–	–	–	0.46	0.46	ND	ND	ND
88SE010	5599	88-06-21	–	–	–	0.30	ND	ND	ND	ND

– NOT ANALYZED   ND – NOT DETECTED

PESTICIDES & BACTERIA DATA – SOUTHEAST REGION 1988

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM (counts/100 ml)	BACKGROUND (counts/100 ml)	FECAL COLIFORM (counts/100 ml)	ATRAZINE (ppb)	D-ETHYL ATRAZINE (ppb)	CYANIZINE (ppb)	METOLACHLOR (ppb)	ALACHLOR (ppb)
88SE010	5960	88-06-28	–	–	–	0.36	0.26	ND	ND	ND
88SE010	6272	88-07-04	<2	<2	0	0.23	0.26	ND	ND	ND
88SE010	6800	88-07-18	–	–	–	0.50	0.53	ND	ND	ND
88SE010	7248	88-08-02	–	–	–	ND	ND	ND	ND	ND
88SE010	7631	88-08-15	<2	<2	0	0.06	0.06	ND	ND	ND
88SE010	8083	88-08-29	–	–	–	0.14	0.14	ND	ND	ND
88SE010	8437	88-09-12	<2	6	0	0.10	0.16	ND	ND	ND

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PESTICIDES & BACTERIA DATA – CENTRAL REGION 1988

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM Count/100ml	FECAL COLIFORM Count/100ml	ATRAZINE UG/L	D-ETHYL ATRAZINE UG/L	CYANAZINE UG/L	METALOCHLOR UG/L	ALACHLOR UG/L	O.C.I. UG/L	O.P.I. UG/L	E.B.D.C. UG/L	N-methyl carbamates UG/L	thio-carbamates UG/L
88PC001	4420	88-05-17	–	–	–	–	–	–	–	ND	ND	ND	ND	–
88PC001	5017	88-06-10	12	0	–	–	–	–	–	–	–	ND	ND	ND
88PC001	5726	88-06-22	6	0	–	–	–	–	–	–	–	ND	ND	ND
88PC001	6303	88-07-06	12	0	–	–	–	–	–	ND	ND	ND	ND	ND
88PC001	6900	88-07-20	0	0	–	–	–	–	–	ND	ND	ND	ND	ND
88PC001	7260	88-08-02	4	0	–	–	–	–	–	ND	ND	ND	ND	ND
88PC001	7665	88-08-17	–	–	–	–	–	–	–	–	–	ND	ND	ND
88PC001	8223	88-08-30	–	–	–	–	–	–	–	–	–	ND	ND	ND
88PC002	4432	88-05-17	–	–	ND	ND	ND	ND	ND	–	–	–	–	–
88PC002	4493	88-05-24	0	0	ND	ND	ND	ND	ND	–	–	–	–	–
88PC002	5010	88-06-10	0	0	ND	ND	ND	ND	ND	–	–	–	–	–
88PC002	5718	88-06-22	4	0	ND	ND	ND	ND	ND	–	–	–	–	–
88PC002	6296	88-07-06	0	0	ND	ND	ND	ND	ND	–	–	–	–	–
88PC002	6893	88-07-20	0	0	ND	ND	ND	ND	ND	–	–	–	–	–
88PC002	7253	88-08-02	0	0	ND	ND	ND	ND	ND	–	–	–	–	–
88PC002	7653	88-08-17	–	–	ND	ND	ND	ND	ND	–	–	–	–	–
88PC002	8225	88-08-30	–	–	ND	ND	ND	ND	ND	–	–	–	–	–
88PC003	4433	88-05-17	–	–	ND	ND	ND	ND	ND	–	–	–	–	–
88PC003	4494	88-05-24	44	0	ND	ND	ND	ND	ND	–	–	–	–	–
88PC003	5011	88-06-10	4	0	ND	ND	ND	ND	ND	–	–	–	–	–
88PC003	5719	88-06-22	0	0	ND	ND	ND	ND	ND	–	–	–	–	–
88PC003	6894	88-07-20	76	0	ND	ND	ND	ND	ND	–	–	–	–	–
88PC003	7254	88-08-02	>160	0	ND	ND	ND	ND	ND	–	–	–	–	–
88PC003	7654	88-08-17	–	–	ND	ND	ND	ND	ND	–	–	–	–	–
88PC003	8226	88-08-30	–	–	ND	ND	ND	ND	ND	–	–	–	–	–

PESTICIDES & BACTERIA DATA – CENTRAL REGION 1988

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM Count/100ml	FECAL COLIFORM Count/100ml	ATRAZINE UG/L	D-ETHYL ATRAZINE UG/L	CYANAZINE UG/L	METALOCHLOR UG/L	ALACHLOR UG/L	O.C.I. UG/L	O.P.I. UG/L	E.B.D.C. UG/L	N-methyl carbamates UG/L	thio-carbamates UG/L
88PC004	4419	88-05-17	–	–	–	–	–	–	–	ND	ND	ND	ND	–
88PC004	4503	88-05-24	2	0	–	–	–	–	–	ND	ND	ND	ND	–
88PC004	5016	88-06-10	10	0	–	–	–	–	–	–	–	ND	ND	ND
88PC004	5725	88-06-22	6	0	–	–	–	–	–	–	–	ND	ND	ND
88PC004	6312	88-07-06	0	0	–	–	–	–	–	–	–	ND	ND	ND
88PC004	6899	88-07-20	0	0	–	–	–	–	–	ND	ND	ND	ND	ND
88PC004	7259	88-08-02	2	0	–	–	–	–	–	ND	ND	ND	ND	ND
88PC004	7664	88-08-17	–	–	–	–	–	–	–	–	–	ND	ND	ND
88PC004	8222	88-08-30	–	–	–	–	–	–	–	–	–	ND	ND	ND
88CP005	4435	88-05-17	–	–	0.13	0.23	ND	ND	ND	–	–	–	–	–
88CP005	4496	88-05-24	48	0	ND	ND	ND	ND	ND	–	–	–	–	–
88CP005	5013	88-06-10	18	0	0.33	0.40	ND	ND	ND	–	–	–	–	–
88CP005	–	88-06-21	2	0	–	–	–	–	–	–	–	–	–	–
88CP005	5722	88-06-22	0	0	ND	0.63	ND	ND	ND	–	–	–	–	–
88CP005	6298	88-07-06	4	0	0.26	ND	ND	ND	ND	–	–	–	–	–
88CP005	6299	88-07-06	5	0	0.93	ND	ND	ND	ND	–	–	–	–	–
88CP005	6895	88-07-20	44	0	ND	0.26	ND	ND	ND	–	–	–	–	–
88CP005	6896	88-07-20	–	–	ND	0.23	ND	ND	ND	–	–	–	–	–
88CP005	7256	88-08-02	>160	0	ND	0.58	ND	ND	ND	–	–	–	–	–
88CP005	7656	88-08-17	–	–	ND	0.66	ND	ND	ND	–	–	–	–	–
88CP005	8228	88-08-30	–	–	ND	ND	ND	ND	ND	–	–	–	–	–
88CP005	8229	88-08-30	–	–	ND	ND	ND	ND	ND	–	–	–	–	–
88PC006	4418	88-05-17	–	–	–	–	–	–	–	ND	ND	ND	ND	–
88PC006	4502	88-05-24	6	0	–	–	–	–	–	ND	ND	ND	ND	–
88PC006	5015	88-06-10	4	0	–	–	–	–	–	–	–	ND	ND	ND
88PC006	5724	88-06-22	60	0	–	–	–	–	–	–	–	ND	ND	ND
88PC006	6301	88-07-06	4	0	–	–	–	–	–	ND	ND	ND	ND	ND

– = NOT ANALYSED ND = NOT DETECTED

PESTICIDES & BACTERIA DATA – CENTRAL REGION 1988

SITE LOCATION	LAB SAMPLE #	SAMPLE DATE	TOTAL COLIFORM Count #/100ml	FECAL COLIFORM Count #/100ml	ATRAZINE UG/L	D-ETHYL ATRAZINE UG/L	CYANAZINE UG/L	METALOCHLOR UG/L	ALACHLOR UG/L	O.C.I. UG/L	O.P.I. UG/L	E.B.D.C. UG/L	N-methyl carbamates UG/L	thio-carbamates UG/L
88PC006	6898	88-07-20	2	0	–	–	–	–	–	ND	ND	ND	ND	ND
88PC006	7258	88-08-02	>160	3	–	–	–	–	–	ND	ND	ND	ND	ND
88PC006	7663	88-08-17	–	–	–	–	–	–	–	–	–	ND	ND	ND
88PC006	8221	88-08-30	–	–	–	–	–	–	–	–	–	ND	ND	ND
88PC007	4417	88-05-17	–	–	–	–	–	–	–	ND	ND	ND	ND	–
88PC007	4501	88-05-24	0	0	–	–	–	–	–	ND	ND	ND	ND	–
88PC007	5014	88-06-10	0	0	–	–	–	–	–	–	–	ND	ND	ND
88PC007	5723	88-06-22	0	0	–	–	–	–	–	–	–	ND	ND	ND
88PC007	6300	88-07-06	0	0	–	–	–	–	–	ND	ND	ND	ND	ND
88PC007	6897	88-07-20	0	0	–	–	–	–	–	ND	ND	ND	ND	ND
88PC007	7257	88-08-02	0	0	–	–	–	–	–	ND	ND	ND	ND	ND
88PC007	7662	88-08-17	–	–	–	–	–	–	–	–	–	ND	ND	ND
88PC007	8220	88-08-30	–	–	–	–	–	–	–	–	–	ND	ND	ND
88CP008	4434	88-05-17	–	–	ND	ND	ND	ND	–	–	–	–	–	–
88CP008	4495	88-05-24	2	0	ND	ND	ND	ND	–	–	–	–	–	–
88CP008	5012	88-06-10	0	0	ND	ND	ND	ND	–	–	–	–	–	–
88CP008	5720	88-06-22	0	0	ND	ND	ND	ND	–	–	–	–	–	–
88CP008	5721	88-06-22	–	–	ND	ND	ND	ND	–	–	–	–	–	–
88CP008	6297	88-07-06	10	0	ND	ND	ND	ND	–	–	–	–	–	–
88CP008	7255	88-08-02	>6	0	ND	ND	ND	ND	–	–	–	–	–	–
88CP008	7655	88-08-17	–	–	ND	ND	ND	ND	–	–	–	–	–	–
88CP008	8227	88-08-30	–	–	ND	ND	ND	ND	–	–	–	–	–	–
88PC010	4426	88-05-17	–	–	–	–	–	–	–	ND	ND	ND	ND	–
88PC010	4504	88-05-24	2	0	–	–	–	–	–	ND	ND	ND	ND	–
88PC010	5018	88-06-10	>160	0	–	–	–	–	–	–	–	ND	ND	ND
88PC010	5727	88-06-22	0	0	–	–	–	–	–	–	–	ND	ND	ND

APPENDIX 6

Guidelines for Canadian
Drinking Water Quality

Notes

1 Assessment of data indicates no need to set a numerical guideline.

2 It is recommended however, that the concentration of fluoride be adjusted to 1.0 mg/L, which is the optimum level for the control of dental caries. Where the annual mean daily maximum temperature is less than 10^0C, a concentration of 1.2 mg/L should be maintained.

3 Public acceptance of hardness varies considerably. Generally hardness levels between 80 and 100 mg/L (as $CaCO_3$) are considered acceptable; levels greater than 200 mg/L are considered poor but can be tolerated; those in excess of 500 mg/L are normally considered unacceptable. Where water is softened by sodium-ion exchange, it is recommended that a separate unsoftened supply be retained for culinary and drinking purposes.

4 Because lead is a component of many plumbing systems, first drawn water may contain higher concentrations of lead than are found in running water after flushing. Faucets should therefore be thoroughly flushed before water is taken for consumption or analysis.

5 Equivalent to 10.0 mg/L nitrate as nitrogen. Where nitrate and nitrite are determined separately, levels of nitrite should not exceed 4.5 mg/L (1.0 mg/L as nitrogen).

6 No units

7 It is recommended that sodium be included in routine monitoring programs since levels may be of interest to authorities who wish to prescribe sodium restricted diets for their patients.

8 There may be a laxative effect in some individuals when sulphate levels exceed 500 mg/L.

9 For water entering a distribution system. A maximum of 5 NTU may be permitted if it can be demonstrated that disinfection is not compromised by the use of this less stringent value.

10 At the point of consumption.

GUIDELINES FOR CHEMICAL AND PHYSICAL PARAMETERS
1989

PARAMETER	MAC	IMAC	AO	STATUS
ALDICARB	0.009			
ALDRIN+DIELDRIN	0.0007			UNDER REVIEW
AMMONIA(1)				PROPOSED
ARSENIC	0.025			UNDER REVIEW
ASBESTOS(1)				
ATRAZINE		0.06		
AZINPHOS–METHYL	0.02			
BARIUM		1		PROPOSED
BENDIOCARB	0.04			
BENZENE	0.005			
BENZO(a)PYRENE	1E–05			
BORON	5			
BROMOXYNIL		0.005		
CADMIUM	0.005			
CALCIUM(1)				PROPOSED
CARBARYL	0.09			
CARBOFURAN	0.09			
CARBON TETRACHLORIDE	0.005			
CHLORDANE	0.007			UNDER REVIEW
CHLORIDE			<250	PROPOSED
CHLORPYRIFOS	0.09			
CHROMIUM	0.05			
COLOUR			<15TCU	
COPPER			<1.0	UNDER REVIEW
CYANAZINE		0.01		
CYANIDE	0.2			
DIAZINON	0.02			
DICAMBA	0.12			
DICHLOROBENZENE,1,2–	0.2		<0.003	
DICHLOROBENZENE,1,4–	0.005		<0.001	

PARAMETER	MAC	IMAC	AO	STATUS
DICHLOROPHENYLTRICHLORO–				
DIOXINS+FURANS	1.5E–08			
ETHANE (DDT)+METABOLITES	0.03			UNDER REVIEW
DICHLOROETHANE,1,2–		0.005		PROPOSED
DICHLOROMETHANE	0.05			
DICHLOROPHENOL,2,4–	0.9		<0.0003	
DICHLOROPHENOXYACETIC–				
ACID,2,4–(2,4–D)	0.1			UNDER REVIEW
DICLOFOP–METHYL	0.009			
DIMETHOATE		0.02		
DIQUAT	0.07			
DIURON	0.15			
ETHYLBENZENE			<0.0024	
FLUORIDE(2)	1.5			UNDER REVIEW
GASOLINE(2)				
GLYPHOSPHATE		0.28		
HARDNESS(3)				
HEPTACHLOR+HEPTACHLOR				
OXIDE	0.003			UNDER REVIEW
IRON			<0.3	PROPOSED
LEAD(4)	0.01			PROPOSED
LINDANE	0.004			UNDER REVIEW
MAGNESIUM(1)				PROPOSED
MALATHION	0.19			
MANGANESE			<0.05	PROPOSED
MERCURY	0.001			
METHOXYCHLOR	0.9			
METALACHLOR		0.05		
METRIBUZIN	0.08			
MONOCHLOROBENZENE	0.08		<0.03	PROPOSED
NITRATE(5)	45			PROPOSED
NITRILOTRIACETIC ACID(NTA)	0.05			UNDER REVIEW
ODOUR			INOFFENSIVE	
PARAQUAT		0.01		
PARATHION	0.05			

PARAMETER	MAC	IMAC	AO	STATUS
PENTACHLOROPHENOL	0.06		<0.03	
pH(6)			6.5−8.5	
PHORATE		0.002		
PICLORAM	0.19			PROPOSED
SELENIUM	0.01			
SIMAZINE		0.01		
SODIUM(7)			<200	PROPOSED
SULPHATE(8)			<500	PROPOSED
SULPHIDE(asH2S)			<0.05	PROPOSED
TASTE			INOFFENSIVE	
TEMEPHOS		0.28		
TEMPERATURE			<15C	
TERBUFOS		0.001		
TETRACHLOROPHENOL,2,3,4,6−	0.1		<0.001	
TOLUENE			<0.024	
TOTAL DISSOLVED SOLIDS			<500	UNDER REVIEW
TRIALLATE	0.23			
TRICHLOROETHYLENE	0.05			PROPOSED
TRICHLOROPHENOL,2,4,6	0.005		<0.002	
TRICHLOROPHENOXYACETIC ACID,2,4,5−(2,4,5−T)	0.28		<0.02	
TRIFLURALIN		0.045		PROPOSED
TRIHALOMETHANES	0.35			UNDER REVIEW
TURBITY (9,10)	1NTU		<5NTU	
URANIUM	0.1			
XYLENES			<0.3	
ZINC			<5.0	PROPOSED